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VOL. I.—6TH YEAR. SYDNEY: SATURDAY, FEBRUARY 8, 1919. No. 6.

AN INAUGURAL ADDRESS.

By **H. G. Chapman, M.D. (Melb.),**
Professor of Pharmacology, University of Sydney.

Part II.

The Chair of Pharmacology has been established to encourage a study of pharmacology. Pharmacology is that division of knowledge which deals with drugs and their action upon living things. It is also concerned with the use of drugs in the treatment of disease. It is one of the most ancient branches of science. The use of drugs is as old as any form of medical information. The φάρμακον of the Greeks was believed to be endowed with a larger number of properties than are attributed to the medicine of the present day. It was with a φάρμακον that Socrates was bidden to end his days; it was with a φάρμακον that Circe transformed the companions of Ulysses into swine, and it was with a φάρμακον that the same sorceress was forced to convert the bestial hogs again to men. It would thus appear that the φάρμακον of the Greeks was not only a drug capable of removing the effects of sickness, but was able to bring about startling changes in living things. Even when drugs were considered mainly to be useful in treating the diseases of the body and of the mind, we find many curious examples of potent medicinal substances.

A knowledge of medicinal substances, of their preparation, of their identification and of their chemical and physical qualities forms one division of pharmacological knowledge. The preparation of drugs for administration forms another branch. With the growth of medical science the compounding of drugs for administration has passed from the hands of the medical practitioner to those of the pharmacist. It is held that this preparation of medicines needs special training, and that the medical man has neither the time nor the opportunity to acquire the special knowledge required in the compounding of medicines. The pharmaceutical chemist thus obtains the drugs which are to be administered, utilizes his expert knowledge in determining their purity and their conformity with the standards laid down in the official pharmacopœia, makes from these drugs the different medicines which can be conveniently administered to the patient, and finally dispenses in a suitable form those particular remedies which are needed by the sick person. The institution of the Chair of Pharmacology has been in part undertaken with the object of providing adequate instruction in pharmacy. For many years the University had given to the student of pharmacy the opportunity of becoming proficient in a knowledge of chemistry, botany and the *materia medica*. No systematic teaching could be obtained in the State in regard to the manufacture of different medicines, nor as to the correct methods for compounding them together. Students of pharmacy obtained what information they could in the pharmacies in which they were employed. A highly qualified pharmacist, Mr. R. H. Stroud, has been engaged to direct the pharmaceutical studies, and it is hoped that every pharmacist in this State will gain some advantage from the work that is being undertaken. Until the establishment of this chair, no particular teacher in the University was charged with the care of the interests of the students of pharmacy. The Professor of Pharmacology has been granted the direction of the studies of the students of pharmacy. So far, the only change which has been instituted has been the establishment of the course of practical pharmacy. Efforts are being made to correlate all the different teaching, so as to make the student at the completion of his course a thoroughly trained pharmacist. It will remain with the Pharmacy Board to test the adequacy of this training before the student becomes a qualified pharmacist. If, however, the student of pharmacy is to become a properly equipped pharmacist, it is necessary that he should enter the University with a sufficient education to enable him to make use of the information that is taught. It is useless for a student who is so ill provided with a knowledge of English or of arithmetic as to fail to understand the meaning of simple English to be incapable of writing an account of what he wishes to say or to be unable to solve a problem of simple proportion, to attend instruction in the University. If the University is to train and equip the pharmacist the student must be sufficiently educated before he enters the University. At present a student is permitted to study pharmacy, provided he passes an examination set by the Pharmacy Board or an examination recognized by that Board as being equivalent to its examination. While it may be desirable that every student who enters the University should attain the standing of a student who has received a Leaving Certificate, it would appear at present satisfactory if the students of pharmacy pass an examination of the same standard as that of the Intermediate Examination. Such students would be able to attend the classes for pharmacy students with advantage. While such an education will be sufficient to enable a student of pharmacy to become a skilful pharmacist, a more advanced education would enable the student to attain to greater knowledge of drugs and their behaviour. Those students who have received such an education that they can obtain the Leaving Certificate should be given the opportunity of acquiring as thorough a knowledge of pharmacy as can be obtained at the present time. It would seem desirable to grant a degree in science to students of pharmacy. Such a degree would be given to those who pass the examinations in the subjects of the curriculum. These students would receive instruction in physics, chemistry and botany, in physiology and in bacteriology, as well as in *materia medica* and pharmacy. In the advanced years of the course an opportunity might be given to the student to specialize on the chemical, botanical or pharmacological science.

Pharmacology is also concerned with the action of drugs on living things. Not only does it take note

of the effects produced in man, in health and in disease, by the administration of drugs, but it also takes cognizance of the effect produced by drugs on all forms of life, animal and vegetable. This branch of study is of only recent development along scientific lines. It represents an attempt to explain the influence of drugs in terms of anatomy and physiology.

It not only treats concerning the action of drugs on the body as a whole and upon the functions of the various organs, but it endeavours to show how these changes are brought about. A drug possesses some effect on one of the main systems of the body. For example, it may increase the rate of the heart beat or the number of respirations or the depth of a respiration. Modern pharmacology is concerned with the way in which this alteration of function is brought about. The various parts of the body on which drugs act are not only made up of structures arranged in a special architectural plan, but are built up of substances endowed with chemical and physical qualities. It is now recognized that the selection of some special part of the body as a seat of action of a drug is dependent upon some physical or chemical character in that part which leads to an accumulation of the drug in that particular portion of the body. Not only so, but the drug may so alter the characters of the particular part of the body upon which it acts that the alteration in function is directly dependent upon the change in chemical composition. No better example of this mode of action can be advanced than that of the influence of the carbon monoxide present in coal gas upon the colouring matter of the blood. The colouring matter of the blood is concerned with the carriage of oxygen, a constituent of the atmosphere, from one part of the body to another. In the lungs the colouring matter takes up oxygen from the air breathed and carries it to the tissues, where it is utilized in the combustion of the nutritive materials which are stored within the cells. The union between oxygen and hæmoglobin, as this colouring matter is called, is a chemical combination dependent upon the properties of the two substances. The carbon monoxide of coal gas is taken into the blood in a very similar way to the inspiration of oxygen. It unites with the colouring matter and forms a union of such stability that the colouring matter is no longer capable of combination with oxygen. As a consequence, the administration of carbon monoxide diminishes the supply of oxygen to the tissues and thus produces a kind of internal suffocation. Up to the present it has only been possible in a limited number of cases to explain in a rational manner how the changes brought about by drugs are produced in the different parts of the animal organism. We as yet know too little of the chemical composition of the human body and of the way in which the various functions depend upon the chemical changes which are taking place within the organism. We do, however, recognize that most of the qualities and functions of the different tissues and organs are manifestations of the chemical reactions which occur within. It is by modifying these chemical changes already in progress that drugs give rise to their manifest actions.

Before any marked progress can be brought about in pharmacology along these lines it will be necessary for the biochemist to advance his knowledge of the chemical changes which accompany the physiological action of the different systems in the organs. It will also be necessary for the pathologist to extend his descriptions of disease. At the present time the pathologist is mainly content with an account of the morphological changes which accompany diseases of the human body. He notes those changes in the arrangement of the various organs and tissues produced by disease. He may observe the mechanical results of the distortion of the tissues by the effects of disease. The pathologist, however, passes much more deeply and examines with the microscope the way in which these structural alterations are brought about. He observes how the minute constituents of the tissues are arranged together and how this arrangement differs from that seen in healthy tissues. The pathologist is essentially the student of the dead. He deals with those manifestations of disease which remain after life has become extinct. Not only does the pathologist note the macroscopic and microscopic appearances of diseased portions of the body, but he concerns himself with causation. While he endeavours to trace the relationship between altered appearances in different parts of the body and various factors producing disease, he rarely endeavours to ascertain how these factors give rise to the altered appearance of the diseased organs or tissues. In one particular direction the pathologist pays much attention to the causative factor, *i.e.*, in the case of disease produced by micro-organisms. The pathologist endeavours to detect the morbid agent in the seat of disease or elsewhere. While we may recognize the value of the knowledge that a particular disease is produced as a consequence of the action of a particular bacterium or micro-organism, and while we may grant that a knowledge of this fact may enable us to take such measures as will lead to prevention of the spread of this particular disease, this knowledge is of little avail in assisting us to combat the disease once the individual has become affected. We may know that certain appearances may be noted in the heart and the nervous system, and in other parts of the body, and that these appearances are the result of the introduction of the microbe into the body, but we are not helped thereby to prevent the disease occurring in the different portions of the human organism. It is to the genius of Pasteur that we owe the demonstration of that natural law that bacteria produce their effects as a result of the chemical changes which they initiate. The mere presence of a bacterium is of little importance if that bacterium is unable to bring about any chemical change in its environment. Bacteria are concerned not only with the production of disease in man and among animals, but in a vast number of changes that occur in the world around us. In the soil occurs a series of chemical changes which lead to the destruction of the waste, decaying portions of animals and plants and to the preparation from these matters of substances which will serve as nutrition for new living things. The presence of bacteria in milk accounts for its souring, and for other changes leading to its decomposition. If, however, the bacteria are prevented or hindered from setting up a chemical change, then the milk remains indefinitely wholesome and fit for consumption. Bacteria bring about these

chemical changes by means of certain, little-known substances known as ferments. If the liberation of these ferments is hindered, or if their action is so lessened as to be imperceptible, the presence of bacteria is without effect. Milk in a tin of unsweetened milk or in the cooled milk of the refrigerating store remains unchanged for months, although containing bacteria. In the conception of disease in man it is necessary to follow the same path. In those ailments which are produced by micro-organisms, the chemical changes initiated by the micro-organism must be elucidated. Attention must be given to those chemical changes leading to alterations in the functions of the different parts of the body. Further, in coping with these conditions attempts must be made to interfere with these noxious chemical reactions, so as to prevent any manifestation of diseases. Within the last few years it has been shown that the action upon a tissue in one direction by a chemical substance can be counteracted by the exhibition of some other body. Thus, for example, the antagonism between calcium salts and the salts of sodium and potassium forms one of the most striking features of modern pharmacological investigation. It is not too much to hope that a knowledge of the chemical substances bringing about some pathological condition in some portion of the body would render it possible to introduce into the blood or into the body some other chemical substance which would neutralize or destroy the harmful agent. It is only within quite recent years that it has been clearly seen that progress must take place along these lines, and that little can be gained from attempts to cure diseases with drugs when observation is confined to little more than the nature of the condition from which the patient is suffering, the quantity of drug that is administered and the effect upon the general health of the patient. This method of utilizing drugs is as old as the civilization of man.

After many thousand years we are aware how few are the remedies on which any reliance can be placed. If we study the pharmacopœias which have been issued by the different nations since it became customary to publish these lists of the drugs that are used for the treatment of the sick, we shall see how few substances are regarded throughout the wide world as being sufficiently useful to be included in every list. Much of the scepticism which is felt in regard to the action of medicines, is due to a failure to comprehend how they may be used. It is in part also due to the restricted conception of the changes produced in disease which considers disease as little else than a morphological alteration. Until biochemists have had the opportunity to carry out a sufficient series of investigations on the chemical changes which accompany disease, we can expect little improvement in this direction. When we reflect how few opportunities are given to the chemist to come in contact with disease and to make observations on the effects of medicines on diseased conditions, we need not be astonished at the slow progress of medicine.

There is another aspect of pharmacological investigation which deserves attention. The changes which take place in the body of the sick are no longer to be regarded as disorders from the normal which should be corrected. Many manifestations of disease may represent changes produced in the human body, with the object of diminishing the evil effects of the morbific agency. Cure is the natural ending of much sickness, and the patient will recover completely in many diseases without any treatment whatever. Much may be learned by observing what changes take place in the body in the production of this cure. This knowledge may inform the physician how he may, with advantage, interfere with the functions of the body by following those lines which have already been selected for the natural cure of disease. Already much investigation is taking place in this direction, and still further progress may be expected. Let us take an example which will show how information is gained in this manner. Diphtheria is brought about, as most persons are aware, by the growth of a microbe usually in the throat of the patient. This microbe multiplies on the surface of the throat and in the superficial tissue, and only penetrates in small numbers into the blood, whence it is distributed over the body. The germs which enter into the blood are readily destroyed and killed. The patient in whose throat the bacilli are dwelling, becomes exceedingly ill. The severity of the symptoms is in no way dependent upon the injury produced in the throat by any ulceration or swelling caused by the presence of the germs of diphtheria. In many other conditions of sore throat the amount of injury produced in the throat is much greater than in diphtheria, yet in these conditions the patient may not be severely ill. The severity of the symptoms of the patient affected with diphtheria is dependent upon changes produced in the nervous system and in connexion with the circulation. The heart, which pumps the blood throughout the body, may become enfeebled and unable to drive the blood with sufficient force through the tissues. The nervous system, which links together the different parts of the body and regulates their inter-action, so that the functions of one part of the body co-operate with the functions of another part, may be greatly affected. As a consequence, portions of the body are no longer kept informed as to the events which are taking place elsewhere. It is these changes in the functions of the nervous system and of the circulatory system which produce the disease of diphtheria. The bacillus of diphtheria grows not only in the throat, but outside the body. It may be cultivated in a liquid which differs very little from ordinary meat broth. In such a liquid the bacilli grow in countless numbers. If that broth be introduced into an animal the symptoms of diphtheria are brought about. If the broth be filtered so that all the micro-organisms that give rise to diphtheria, are removed, still the broth is capable of giving rise to the symptoms of diphtheria. After the introduction of this broth the animal shows all the symptoms of diphtheria without any bacilli being present in the throat, and without any of the local signs of the disease. The severity of the effects produced by the broth depends upon the dose in which it is used. In fact, it can be shown that the liquid in which the bacilli have been grown, contains a substance which behaves in a similar way to any powerful drug. Strychnine acts upon the nervous system. The severity of its effects vary from the slight medicinal stimulation of the reflex action producted by a thera-

peutic dose of the drug up to the general bodily spasms, which completely convulse the whole organism. In a similar way the effects of the diphtheritic broth can be varied. It is now recognized that this broth contains a substance known as diphtheria toxin, which produces the symptoms of the disease. When a patient suffers from diphtheria, the bacilli multiply in the throat, and, as a result of their activity, this poisonous substance is produced, which circulates through the blood and initiates the bodily symptoms of diphtheria by its action on the nervous system and upon the heart. Many a patient who suffers from diphtheria recovers without any medical treatment. Although the poison has been introduced into the body, it has not led to the death of the patient. If animals are given increasing quantities of the toxin or toxic broth of diphtheria, a sufficiently large dose will kill an animal. If, however, a less quantity is introduced into an animal and some days later a still larger quantity, it will become possible in a short time to introduce a quantity of diphtheria toxin into an animal without giving rise to any symptoms of disease. By introducing the poison at intervals of several days on several occasions it is possible to reach a condition in which ten or twenty times as much toxin as would have originally killed the animal can be administered without producing any symptoms whatever. An animal which has reached this condition is stated to be immune to the poison of diphtheria. It has been rendered resistant to the poison. Inquiry must be made as to how this immunity is brought about. It has been discovered that the poisonous effects of the toxin, if the diphtheria toxin or poison is mixed with a small quantity of the blood serum of the immunized animal, are inhibited. By taking a sufficient quantity of the serum of the immunized animal the fatal effects of a dose of poison ten or twenty times greater than sufficient to kill an animal may be prevented. At one time it could not be ascertained whether the serum which is known as antitoxin, acted chemically upon the poison or counteracted in some other way the symptoms of the disease. Dr. C. J. Martin, who spent several years in the physiological laboratory of Sir Thomas Anderson Stuart, was successful in devising a method by which it was shown that the antitoxin neutralizes the poison so that it is no longer endowed with harmful consequences. It will now be evident that the symptoms of the patient suffering from diphtheria are brought about by the toxin. This toxin is neutralized and rendered inert by an antitoxin or chemical substance which is manufactured within the body. So far little work has been done upon the nature of the diphtheritic toxin, and we are unaware of the chemical nature of this body. Similarly little is known of the chemical nature of the antitoxin which brings about its neutralization. But we cannot doubt that if we were aware of the nature of the chemical substance which is formed in the body during the growth of the diphtheria organisms in the throat and which produces the disease, it would be an easy matter to introduce substances into the circulation which would render innocuous the toxin by altering the character of those chemical groups and radicals which confer toxicity upon the diphtheritic poison. Up to the present most research has been undertaken to observe under what conditions these substances, which neutralize bacterial poisons, are formed in the animal body and under what conditions the poisons can be neutralized by the substances which are formed antagonistically to the poisons. Little has been attempted in the way of examining the chemical nature of these bodies and attempting this neutralization along the lines of known chemical reactions.

It will be obvious to you now that a knowledge of chemistry and of the chemical changes which occur in the animal body and of the chemical changes which can be induced by pathological agents, and of the chemical changes which can be called forth by drugs, should form a very important part of the information possessed by the medical practitioner. It is on this account that attention of the medical profession has been so frequently drawn to the necessity of a better acquaintance with chemistry. Our knowledge of anatomy and of physiology has advanced now sufficiently far to make it evident that it will not be possible to progress further without a corresponding chemical knowledge. The information gained in regard to the pathology of many diseased conditions is essentially of no greater value than that which was possessed one hundred years ago. As a matter of fact, consideration will show that if there was an absolutely complete acquaintance with the structural changes which occur in the body in disease and with the microscopical appearance of every part of the diseased tissue there would be little further advance in medical treatment. The progress of medicine, and no doubt in part of surgery, can only take place as the result of an extension of our knowledge in regard to the way in which diseased conditions are brought about. Pharmacology is concerned not only with the actions of drugs, but it is also concerned with the application of drugs for the treatment of disease. This part of pharmacology is frequently known as therapeutics. There has grown up the practice of separating the scientific study of the body and its diseases from ordinary medical practice. Those who are engaged in the study of anatomy, physiology and pathology and pharmacology have frequently few opportunities of engaging in the treatment and cure of the sick. It cannot be doubted that this separation possesses certain disadvantages. The worker in the laboratory in the medical school is liable to be unaware of the problems which are met with daily by the physican in the wards or in the rounds of practice. It would seem advisable to consider whether the training of medical students could not be improved by permitting those studying certain of the scientific parts of the curriculum to engage in medical practice. Would it not be advisable if the pathologist had more opportunity of observing disease in the living, and not so frequently in the dead? Is it not more conducive to advancement that those who are studying the action of drugs should do so not only upon animals, but also that they should have the opportunity of observing the effect of medicines administered in the cure of disease. Leaving aside for the moment the question as to whether those engaged in teaching anatomy, physiology and pathology should have the opportunity of observing the effects of drugs upon

the sick, it seems distinctly advantageous that those entrusted with the teaching of pharmacology should be able to observe the influence of drugs administered in the wards of the hospitals by the physicians and surgeons. The pharmacologist could either visit the wards in company with the physician, so that he might have opportunity of noting how medicines are administered and of observing their actions, or he might be one of the physicians at the hospital and engage in a certain amount of medical practice. It cannot be doubted that the pharmacologist would benefit by his daily contact with the effects of medicines on the sick and he would be able to correct the impressions which he gained in the laboratory, by the information that he collected in the wards. Again, the medical practitioner who has devoted himself to the serious study of some branch of medicine finds that he has little opportunity of connecting his studies with the treatment of the sick or of utilizing it in medical practice, and he pays more attention to those economic problems which are closely connected with his branch of science. In this field he does not experience the opposition which is manifested to his attempts to apply accurate information about his science to the alleviation of the ailments of patients.

To deal now with the aims of the science of pharmacology, how are they to be forwarded within the University? In what manner must pharmacology be taught the students? There can be little question that the student must be taught the properties and actions of drugs and not the ideas which may be held by different persons about them. He must be taught in such a way that he learns that in the drug itself or in its actual behaviour he shall find the answer to the queries which arise in his mind. Should he want to know if a particular drug can be dissolved in such a quantity of water as is contained in a medicine bottle he should learn that such information is not most accurately obtained from a study of books, but by actually placing the quantity of drug in the necessary amount of water and observing whether the solution has taken place. Real pharmacological knowledge will be acquired by the student in the laboratory and not in the lecture-room. If the Department of Pharmacology is to achieve success in this University, it is needful that laboratory accommodation should be provided in which every student may have the opportunity of finding for himself how pharmacological information is to be acquired. How must these laboratories be equipped? In the first place, there must be chemical laboratories, in which the properties of the drugs can be examined. Not only so, but the Department will need laboratories in which crude herbs and vegetable and animal products can be analysed, so that we may ascertain on what chemical substances their action depends. For many years Dr. J. M. Petrie has been engaged in the Physiological Department in examining the nature of the products obtained from plants growing naturally in Australia. Few areas of the world are richer in vegetable products than our continent, and it behoves us to find which of these products will yield substances useful in the treatment of diseases of men and animals in our own universities. At present those from other shores have done far more than ourselves in elucidating the properties of these materials. In addition to laboratories equipped for chemical investigation, there will be needed physiological laboratories, in which the actions of drugs upon the functions of men and animals can be ascertained. In conclusion, let me remind you that progress in science is only possible by research and investigation. No amount of intellectual subtlety or skill will serve to bridge over the gap of absent information. Philosophers for two thousand years considered the process of alcoholic fermentation. It was not until the seventeenth century that the fact was observed that sweet liquids alone fermented, and that the spirit which had excited so much interest in the fermentative process was part of the sugar. The simple information that fermentation is the splitting of sugar into approximately equal portions of alcohol and carbonic acid gas by means of the ferments contained within the bodies of the tiny yeast plant was accumulated by patient searching during 250 years. The capacity to observe accurately what has taken place, and not simply to interpret what is seen in the light of what is already known about what is seen, is extremely rare. The power of describing any process in a simple account of what has taken place, is perhaps even less common. The events of the last few years have taught us some of the material disadvantages of laying no stress upon the acquisition of scientific knowledge. We have paid a heavy price, one which will appear perhaps heavier to succeeding generations than to ourselves, for the gratification of holding that what we do is as well done as it is possible to do it. If the Department of Pharmacology is going to be useful to this community and to mankind as a whole, it will be successful just as much as a spirit of investigation is manifested within its walls.

THE HEALTH OF THE STATE.

By **John Morton, M.B., Ch.M. (Syd.),**
Honorary Surgeon, Royal Prince Alfred Hospital; Honorary Surgeon, Women's Hospital, Sydney.

Some ideas have occurred to me in connexion with the above subject, which I put forward for what they are worth, and in the hope that some good may arise therefrom.

In the first place, I feel convinced that most ill-health is due to epidemic disease, a conviction founded mainly on my experience of medical practice in the country for over six years.

The town in which I practised is about forty miles from Sydney, and has a number of outlying villages around it.

My experience there was that, while no epidemic was prevalent, there was very little sickness of any kind. When an epidemic arrived it generally affected different parts of the district at different times, and my work would mainly be in the locality affected, not only, however, with typical cases of the epidemic sickness, but with troubles apparently foreign to it, such as, for example, bronchitis, rheumatism, cholecystitis, appendicitis or any of the ailments which occur in the medical menu of general practice.

In fact, the conclusion was forced upon me that these troubles are simply atypical forms of epidemic

sickness in persons for the most part immune, but possessing a *locus minoris resistentiæ* in the shape of a damaged gall-bladder, appendix, heart, kidney, bladder, joint, etc., damaged originally in all probability by one of these very infections.

In the city this aspect of sickness would not be obvious, because the medical practitioner has to do with a circumscribed and crowded area and not with a group of comparatively isolated centres, such as occurs in country practice. In the latter the coincidence of epidemic sickness with other forms of sickness is easily noticeable.

If this theory be correct, it follows that there would be comparatively little sickness of any kind were it possible to eliminate infectious disease, and the importance of preventive measures would be distinctly magnified.

The problem of prevention is a very difficult one, but possibly the solution of it is not so hopeless as it appears. There is fair reason to assume, for all practical purposes, that infection is only spread either by direct contact or by a definite vehicle in the shape of an insect carrier.

Even when food or drink is proved to be a source of infection the part played by the fly is no less important. It seems quite unlikely that food or drink should be often directly infected by a diseased person, while it is extremely likely that it is very often infected by flies which have been feeding on contagious matter in the neighbourhood.

The infecting organisms probably require careful handling, and must usually perish, unless carried direct to another host or to a suitable culture medium. They do not seem to be carried about in the air or even dust to any extent. Otherwise, how could we do aseptic operations in the dusty air of a camp tent, such as I have seen in a military hospital at Lemnos, where we had plenty of septic cases and, during the fly season, a great collection of infectious diseases.

Again, I don't think germs are often conveyed by clothes, etc. Otherwise, how is it that the doctor does not spread infection? I honestly believe that I have never carried infection in this way in many years of practice, either that of ordinary fevers or midwifery infection.

If such channels of infection were important, what could be more dangerous than money, particularly bank notes? These must constantly be contaminated and passed into circulation. Bacteriological investigation of money has been singularly barren of result. I have been told of two such investigations, one by an expert of the very first rank.

Increasing knowledge has incriminated insects more and more in the spread of infectious disease, and, to my mind, the destruction of possible insect carriers should be the chief measure of prevention where preventive vaccination is not available.

Of these carriers—with us—the fly is probably the greatest offender, and what is being done to get rid of it? As far as I know, Strathfield is the only suburb of Sydney where an effort is made to draw public attention to the danger. It should be compulsory for very householder in the State to keep in constant working order some approved form of fly-trap, more particularly at this time of the year when flies are beginning to breed.

If a properly organized campaign were undertaken against the fly and its breeding-grounds it could be practically banished in a short time, and, further, if mosquitoes, fleas, bugs and lice were included in the declaration of war, we might not unreasonably hope some day to make epidemic disease a thing of the past.

It will be argued that diseases like scarlet fever, measles, influenza, etc., do not require the intervention of an insect for their propagation. I can only say that we formerly looked upon typhus as an example *par excellence* of a disease of defective ventilation. Now we know that it is spread by lice, and, moreover, that the virulence of the infection is intensified by its sojourn in the louse.

Where the chain of infection has been worked out we have had so many similar surprises that we cannot ignore the possibility of an insect carrier in the diseases above mentioned.

How do we know, for instance, that fleas in homes, hotels, schools, churches, theatres and those on pet animals are not the vehicles of infection in these diseases. Anyone who says this is absurd does not realize what a ubiquitous animal the flea is. At any rate, the present methods of preventing the spread of infection are so ineffectual that a trial of the insect theory seems worth while. I remember reading in some work on fevers that at one institution in England (Barnardo's Home, I think) cases of measles and scarlet fever were nursed in a ward with other children, and spread of infection avoided by the liberal use of eucalyptus oil. This was applied to the skin and throat and hung about the bed.

Is it possible that the eucalyptus acted by making the patients objectionable to insect carriers rather than to any direct effect on the germs?

Infant Feeding.

Another subject of great importance to the State welfare is that of infant feeding and the question of infantile mortality from gastro-enteritis, which is closely associated therewith.

It is necessary for the proper feeding of infants that they should get milk fresh from the breasts of the mother, or of an animal foster mother.

For many years I have been in the habit of recommending mothers to keep a goat, if possible, when artificial feeding was necessary, and I was pleased to read quite recently that in Hong Kong there is an institution for Chinese baby waifs where the infants are suckled by goats with the happiest results.

No amount of dairy inspection will give us clean cow's milk, unless it is used almost direct from the udder.

It is unreasonable to expect anything else. It would require a skilled bacteriologist first to obtain and then to keep milk free from germ contamination, and the ordinary dairy hand is, to say the least, far from being either skilled or enthusiastic in this direction.

To realize this, it is only necessary to have a look at the collection of filth which accumulates in the strainer through which milk is passed at a creamery.

I think, therefore, the establishment of goat nurseries, such as that mentioned, is well worth the consideration of the Government.

Possibly goat farms could be established, from which goats in milk could be hired out when required.

To return to gastro-enteritis. My experience of this disease has brought me to believe that it is associated with the proximity of horse manure, and I have long thought that the cases do best when they can be shifted to a locality removed from main roads and stables.

Here again, if there be any truth in this supposition, the rôle of the fly is no less important. Flies come direct from the succulent horse dung to milk or other food which is in preparation for baby, and the rest is easy to imagine.

If milk be supplied direct from the breast to the infant there is no chance for the intervention of the fly, and in this, I believe, lies the whole explanation of the fact that gastro-enteritis is most prevalent in bottle-fed babies.

Sunlight v. Ventilation.

While ventilation is no doubt a very good thing, I think that much of the benefit attributed to fresh air is really due to the action of sunlight.

In England and on the Continent *lupus vulgaris* is an extremely common form of skin disease. Here it is very rarely seen, although tuberculosis in other forms is common enough. The only factor to which I can attribute the difference is that of sunlight. Other conditions which might favour its appearance here do not seem to be altogether wanting.

The benefit of out-of-door treatment is most noticeable in cases of tubercular disease, but it is probably to the extra sunlight and not the fresh air that the improvement is due.

If this be so, provision for daylight is quite as important as provision for ventilation in building regulations.

These notions are not orthodox, and may not survive the test of criticism, but if they merely serve to focus attention and stimulate discussion upon some very important problems a useful purpose would be achieved.

Reports of Cases.

NOTES ON A CASE OF PNEUMONIA.[1]

By **C. Joyce, M.B. (Melb.),**
Perth.

I am inflicting on you these notes for the reasons that Spanish influenza, with attendant pneumonia, threatens us. On questioning Dr. Barker when he visited Pinjarra recently, I was informed that it is the custom to feed pneumonia patients during the febrile stage in Perth Hospital. Dr. Barker saw this patient, and is able to inform you that the man had pneumonia of a fairly severe type.

R.R., aged 34, timber-feller, 180 cm. (6 feet) in height, weight 81 kilos (13 stone), was seen by me at Marrinup on September 13, 1918. He complained of headache, pain in his limbs and in the right side of his chest on taking a deep breath. His temperature was 38.8° C.. There was some dulness at the right base, with fine crepitations. He arrived at Pinjarra Hospital next day, and had then dulness at the right base, tubular breathing, abundant, moist râles and blood-stained sputum. The respirations were 22 and the pulse 88, full, but very compressible. The temperature was 38.4° C.. There were disquieting features in the case, *viz.*, that the febrile reaction was not proportional to the extent of the disease, the pulse, though not rapid (as is frequently the case in axe-men when ill) was decidedly weak, and the patient's frame of mind (described by Dr. Barker as resentful) was not promising.

He was ordered calomel 0.3 grm. (gr. v.) in divided doses, to be followed by Epsom salts. He was ordered *syr, cocci-lanæ* co. 1.8 mils (3 ss.) every four hours as a placebo and as much water as he would drink. No food was allowed. Though this seemed a case where the toxins of the disease seemed to overwhelm the patient's powers of resistance, and he got only a few short snatches of sleep in the first 48 hours, he did well. About two-thirds of the lung were involved, and friction sounds were heard in the axillary region. He did well, and the temperature fell on the seventh day of illness. He was then allowed tea and bread and butter and was put on milk diet. The temperature rose again after a few days, and as there were signs of effusion his chest was aspirated on the fourteenth day, serum with a few flocculi being obtained. On the sixteenth day pus was found, and under local anæsthesia an incision was made between the ribs, about 5 cm. below the angle of the scapula and a drainage tube sewn in flush with the skin surface. This was covered with a piece of sheet rubber, the upper portion being attached to the skin by adhesive plaster, the lower end hanging down over the tube and dressings applied over this. About 300 c.cm. of pus came away at operation, and the dressings had to be changed an hour later. The stitches cut through and the tube came out about the thirtieth day, and caused a rise of temperature, which soon subsided. He went home on the thirty-eighth day with 3.75 cm. small rubber tubing (baby-bottle size) in the wound and very little discharge. The tube was removed a week later, and two days later the wound was quite healed. He is now anxious to return to work and says he feels quite well (November 13).

This man was given no food for six days. Another patient, who was also seen by Dr. Barker and whose case was recently reported in *The Medical Journal of Australia* received only water for thirteen days and succumbed neither to the disease nor the starvation. I have been withholding food from pneumonia patients for years with the happiest results. In five years I have had twenty-one cases in Pinjarra Hospital, with two deaths. One of the patients was not starved, as the pneumonia complicated typhoid fever. The other had hæmolytic jaundice and was, I think, suffering from the same disease in less fulminant form as acute yellow atrophy.

In my most recent case, that of a single women of advanced age, the patient did not appear to have the stamina to see her through. She was very ill, and I was anxious about her for a day or two, but, instead of the condition becoming steadily graver, as I believe would have been the case if fed, the condition steadily improved. I am convinced that, in an acute illness, such as pneumonia, the digestive functions of the stomach are completely in abeyance. Food administered does not nourish the patient, and is useless. Further, through non-digestion food putrefies, and though the patient may be able to withstand the disease toxins, he frequently succumbs, through being unable to withstand the disease, plus food poisons. I have recently seen a young man with uncomplicated pneumonia die on the tenth day of illness, in spite of all the food and drugs he could take. I have not seen such a happening where food has been withheld.

[1] Read at a Meeting of the Western Australian Branch of the British Medical Association on November 27, 1918.

A CASE OF LACERATED VAGINA DURING COITUS.

By **E. H. Stokes, M.B., Ch.M.,**
Resident Medical Officer, Sydney Hospital.

Mrs. B.C., *æt.* 24, domestic duties, was admitted to the Sydney Hospital at 2 a.m. on November 30, 1918, with a history of hæmorrhage from the vagina arising during coitus with her husband, who, at the time, was under the influence of alcohol. The bleeding commenced immediately after "feeling something tear."

A pelvic examination was made. The vagina was somewhat contracted; the cervix, which was small in size and hard in consistence, was directed backwards; the uterus and appendages were not palpable. To the side and in front of the cervix a tear was to be felt, commencing in the anterior fornix and extending outwards into the right lateral fornix. This tear was about 3 cm. in length and, as could be well seen by means of a speculum, it extended through the mucous mem-

brane, but did not involve the deeper structures. Judging by her appearance and general condition, the patient had lost a fair amount of blood. The temperature was 36.6° C., and the pulse-rate was 110. The bleeding, which had practically ceased on arrival at the hospital, was completely checked by packing the vagina with a broad strip of gauze.

The patient had one child six years ago. A year after that a section was performed by Dr. Morton at the Women's Hospital, Crown Street, at which operation both appendages were removed and a subtotal hysterectomy performed. Since the operation the menstrual periods had ceased.

The interest in this case lies mainly in its rarity. Eden and Lockyer[1] and Bland Sutton and Giles[2] mention that instances have been recorded. Comyns Berkeley[3] states that such ruptures occur as a result of rape or of disproportion between the size of the penis and that of the vagina. According to this author, the lower end of the vagina is the most likely part to be affected, the tear involving the posterior and lateral walls; in exceptional cases it may extend into the peritoneum. I have, however, been unable to find in the literature on the subject any mention of involvement of the anterior and lateral walls. Doubtless the contraction of the vagina was an important determining factor in this case.

The case is reported at the suggestion of Dr. George Armstrong (Honorary Gynæcologist to the Sydney Hospital), who has kindly confirmed the facts set forth.

References.

[1] Eden and Lockyer—"Gynæcology."
[2] Bland Sutton and Giles—"Diseases of Women."
[3] Eden and Lockyer—"New System of Gynæcology" (article on "Diseases of the Vagina," by Comyns Berkeley).

Reviews.

PRACTICAL HÆMATOLOGY.

General practitioners frequently assert that the subject of hæmatology is so complex and so full of technical difficulties that it is impossible in the course of a busy life to keep abreast of the times. It may be admitted that many problems in hæmatology demand an expert for their elucidation, but these are the exceptions. There is scarcely a disease which does not affect the blood, and consequently a full investigation of the patient includes an enumeration of the blood corpuscles and a differential count of the white cells. It is the duty of every medical practitioner to render himself competent to make this examination. To enable him to carry this out Dr. Price-Jones has compiled a handy little book,[1] giving in the simplest and most concise form possible the technique of blood examination and the means of distinguishing the normal and abnormal constituents of blood. The first part instructs the student concerning the collection of the material and the manner of the examination. Excellent coloured plates depict the appearances of normal blood cells and many of the abnormal types. The reader should be able to glean from the first 33 pages the basis of blood examination, and with a little practice he will soon recognize the different forms of red and white cells. The second part is occupied by a description of the blood characteristics of bacterial and protozoal infections, of blood diseases and of cancer. Various staining methods are described in an appendix, and the book closes with a short chapter on the measurement of size of red cells and a phylogenetic diagram of blood cells. The author has been most happy in presenting the practical aspect of his subject briefly and lucidly to his readers. He has avoided all theoretical discussion and all questions of the interpretation of the many deviations from the normal. We can confidently recommend the busy practitioner to buy the book and to allow the author, who is an expert hæmotologist, to arouse enthusiasm in a most fascinating medical study.

PNEUMONIC INFLUENZA.

On January 27, 1919, the Minister for Trade and Customs, by command of His Excellency the Deputy of the Governor-General, published in the *Commonwealth of Australia Gazette* a proclamation under the *Quarantine Act, 1908-1915*, to the following effect:—

(1) That the State of New South Wales is infected with a quarantinable disease, to wit, pneumonic influenza, and is a place from or to which the said quarantinable disease may be brought or carried to other parts of Australia.
(2) That such State shall be a quarantine area.
(3) That all persons and goods in such quarantine area shall be subject to quarantine.

On the following day a similar proclamation was published in the *Commonwealth of Australia Gazette* dealing with the State of Victoria.

In the *New South Wales Government Gazette*, No. 13, of January 28, 1919, a proclamation was published to the effect that "an infectious or contagious disease, highly dangerous to the public health," having broken out in New South Wales, and it being desirable to cut off all communication between persons infected with such disease and other persons, the Governor, with the advice of the Executive Council, ordered all libraries, schools, churches, theatres, public halls and places of indoor resort for public entertainment in the Metropolitan Police District to close and to be kept closed.

In a *Gazette Extraordinary* published on January 30, 1919, His Excellency the Governor of New South Wales proclaimed that no person residing or being in the State of Victoria should pass or come into the State of New South Wales, although a *bona fide* resident of New South Wales, residing within ten miles of the border between the two States, would be allowed to return across the border, provided that he had not been within any district in Victoria where pneumonic influenza was prevailing, and provided that he had a certificate from the Government Medical Officer to the effect that he was not suffering from the disease.

In a further proclamation in the same *Gazette* His Excellency ordered all persons within the County of Cumberland on and after February 3, 1919, while in any public street, vehicle, conveyance, public place or public building to "wear upon the face so as to completely cover the mouth and nose a suitable mask or covering of gauze or other suitable material, sufficient to exclude the germs of the aforesaid infectious or contagious disease."

In a third proclamation, issued on January 30, 1919, His Excellency ordered that no persons in the County of Cumberland may congregate in a licensed hotel bar or room, wine saloon, club room, court house or court room or other place of public assembly, so that the air space in such places shall become less than 250 cubic feet for each person present.

In the *Victoria Government Gazette*, No. 16, of January 28, 1919, the Minister of Public Health publishes regulations under Section 19 of the *Health Act of 1915*:—

(1) These regulations may be cited as the Influenza Regulations (Closing Places of Entertainment), 1919, and shall come into force forthwith upon publication in the *Government Gazette*.
(2) The several classes or kinds of places mentioned in the schedule hereto, being or situated within a radius of fifteen miles from the Post Office, corner of Elizabeth and Bourke Streets, Melbourne, shall be closed and not used until notice permitting such use is published in the *Government Gazette*.

Schedule.—All theatres, picture theatres, music or concert halls, and all public buildings where persons assemble for the purposes of entertainment or instruction.

Naval and Military.

APPOINTMENTS.

In the *Commonwealth of Australia Gazette*, No. 13, of January 30, 1919, the following announcement appears:—

Australian Imperial Force.

Third Military District.

Major E. W. Guthridge is transferred from Second Field Ambulance to Third Australian General Hospital, and to be temporary Lieutenant-Colonel. Dated 24th July, 1918. (This cancels notification regarding this officer which appeared in Executive Minute No. 836/18, promulgated in *Commonwealth of Australia Gazette*, No. 186/18.)

[1] Blood Pictures: An Introduction to Clinical Hæmatology, by Cecil Price-Jones, M.B.; 1917. Bristol: John Wright & Sons, Limited; Demy 8vo., pp. 91, with five coloured plates and four illustrations in the text. Price, 6s. 6d. net.

The Medical Journal of Australia.

SATURDAY, FEBRUARY 8, 1919.

Medical Education in Australia.

The public and the medical profession recognize that there is a need for a change, a reform of some kind in the great work of healing the sick. The public finds difficulty in determining the nature of this change. At one time there was a demand for the introduction of national insurance; at another the majority favoured a national medical service, with salaried medical officers to attend the sick at the expense of the State; at another time the proposal was put forward that the system of contract practice should be extended, and should embrace institutional treatment. Notwithstanding the earnestness of those advocating these various innovations, it is obvious that none of them would result in a real improvement in the arrangements for medical attendance. The medical profession has attacked the problem with caution, and has been especially determined not to disturb the relations which exist between patients and their trusted medical advisers. The tendency at present is to aim at an improvement in the application of preventive medicine, and to initiate some form of co-ordination between the practising doctor and the public health official. Whether a sweeping reform, a drastic revolution, will be introduced, or whether a change will be effected by gradual stages, remains to be seen. There is, however, another aspect of the question of the quality of the service rendered by the medical profession to the public. The importance of this aspect is even more fundamental than that of prevention of disease, for it involves the question of efficiency. It is the educational aspect.

While it is indisputable that the advance in medical science has been rapid during the past decades, we are forced to admit that the curriculum in our medical schools and the facilities for the acquisition of scientific knowledge and for the conduct of original research work are urgently in need of revision. Within recent times certain events have taken place which have the effect of indicating the need for changes both in system and in detail. In this journal we publish an inaugural address by the Professor of Pharmacology of the University of Sydney, which is pregnant with cogent argument in favour of a fuller and more precise training in chemical science and in the methods adopted in the laboratory. Its perusal will convince the reader of the immense advantage of a full education in the basic sciences, as compared with the teaching of what we may call for want of a better term, text-book medicine. The medical practitioner of to-morrow must be equipped with scientific weapons, a first hand acquaintance with the methods employed in the accumulation of knowledge concerning the body, its functions and its defects in pathological stages. During his student life his critical faculties should be awakened. His education differs from that of the commercial student, in that the primary aim must be to develope his mental capability to the utmost advantage, and to awaken a love for his science for its own sake. He should learn that there are two kinds of successful practitioners. There is the doctor who, with a stock in trade of pleasing manners, facile conversation and knowledge of human nature, makes medical practice a financial success. On the other hand, there is the practitioner who compels recognition of the value of his services, because they are founded on sound scientific knowledge. It is not necessary that every general practitioner should be required to carry out original investigations, either in the laboratory or at the bed-side. But he should at least be practised in ordinary laboratory methods, and be trained to be able to form a competent opinion on the soundness of a biological, chemical or physical deduction in connexion with a physiological or pathological process. This degree of efficiency can only be acquired by a sound scientific training of medical students.

We would urge three things with this object in view. The first is a recasting of the curriculum. This subject will be dealt within a subsequent issue. In the second place we emphasize the necessity for the establishment of additional chairs in the faculties of medicine at each of the universities. In Sydney there is no longer reasonable excuse for the delay in the appointment of professors of medicine and of surgery. Similar chairs should be established in the University of Melbourne, and an additional chair of bio-chemistry or of pharmacology is highly desirable. In the Uni-

versity of Adelaide, the institution of a professorship of pathology is long overdue. As time progresses other chairs must be founded, but for the present those enumerated above represent the most essential. The third reform for which we would plead, is the introduction into the training of medical students of facilities for the carrying out by the student under the supervision of the teacher of technical manipulations in the laboratory and in the wards. The arguments in favour of this innovation have been so ably set forth by Professor Chapman that the necessity to traduce them in this place is removed. Time and tide wait for no man. Progress in science takes place irresistibly. Let us see that the workers in our Australian universities and the graduates who leave our medical schools to reap in practice what their teachers sow, are well enough equipped to participate in the onward movement.

CREMATION.

The medical profession, as custodians of the public health, has the duty of moulding public opinion concerning the customs and procedures of the community in so far as these customs and procedures affect health. Medical practitioners recognize that even if the practice of preventive medicine involves an actual financial disadvantage to them individually, by advice, precept and action they are bound to participate in the struggle against disease and death. The science of hygiene is being built up on a sound foundation born in the laboratory and in the open world. Each problem in hygiene has to be carefully investigated and every proposed remedy has to be tested in the most critical manner, until scientific proof of the solution is forthcoming. Armed with facts, the hygienist has no hesitation in pressing for reforms dictated by his science. The proverbial difference of opinion of medical men is unfortunately often due to the baneful habit of drawing conclusions on insufficient evidence or even in opposition to ascertained facts.

After subjecting the question of the various methods of the disposal of the dead to a searching and critical survey, and after taking into consideration the many issues involved in the alteration of the usual practice of earth burial, hygienists the world over have arrived at the conclusion that cremation offers advantages and safeguards not possessed by any other method. We have dealt with this problem on several occasions and have urged the view that the possibility of a spread of infection from the grave to the living is a very real argument in favour of the disposal of human bodies by fire. In July, 1917, Dr. W. G. Armstrong, the Senior Medical Officer of Health of New South Wales, published in this journal an excellent advocacy of cremation and elaborated one by one the several reasons for the adoption of this method. Apart from the possible danger to the living of infection from buried bodies, there is the serious problem of the necessity of providing large areas of land in the immediate neighbourhood of big cities for cemeteries. In many instances cemeteries have become offensive to those living hard by, and inevitably even the largest become filled and have to be closed. Later there may arise the demand to utilize the land for other purposes and the undesirable experience of the Devonshire Street cemetery in Sydney may be repeated. It is thus claimed that both on hygienic and on ecenomic grounds cremation must be regarded as the most rational method of dealing with decaying human and animal bodies.

When the public has been induced to regard earth burial as an objectionable means for the disposal of bodies, at all events in large cities, there will be a general demand for crematoria in the chief Australian cities. At present Adelaide alone possesses one. The case has been urged in Brisbane and a Cremation Association exists to educate public opinion in this direction. In Sydney a company is being formed under the auspices of the Cremation Society of New South Wales. This company has persuaded the Government of the State to grant a site for a crematorium, and as soon as a capital of £5,000 has been subscribed, operations will be begun. Money invested in this company should return a double interest; the first a substantial one in the safety of the public health, and the other a modest one in pounds, shillings and pence. We shall not desist from urging this reform until a crematorium has been erected in each of the capital cities in the Commonwealth.

THE HÔTEL DIEU OF PARIS.

It is generally conceded that the Hôtel Dieu of Paris is the oldest of the hospitals of Europe which have a history of unbroken service until the present time. Certainly no institution extant in Europe to-day has had a more varied career or has been more closely associated with the fortunes of the people who resorted to it in their distress and supported it in their affluence. The hospital was founded by Saint Landry, twenty-eighth bishop of the city, about the middle of the seventh century. He disposed of many treasures of the church in order to meet his obligation for the support of many poor persons who sought asylum in his palace. The year 660 has been assigned as the exact date of the selection of a building for the care of the sick. This building had been occupied previously by the nuns, who had charge of the treasures and linen of the Cathedral of Notre Dame. This institution was at first known as St. Christopher's Hospital. In the eleventh century this hospital was torn down and reconstructed on the north shore of the smaller arm of the Seine. The original name of this institution was *Domus Dei,* and its motto was *Medicus et Hospes.* This hospital consisted of four wards or halls capable of accommodating eight or nine hundred patients. The St. Denis ward for those desperately ill was erected through the munificence of Philippe Augustus. In 1210 A.D. the *Infirmerie* and the St. Thomas ward for convalescents were equipped by Queen Blanche, mother of Louis IX.. The new ward was intended for women, and the basement was employed for maternity cases. The hospital stood on this site until 1878, when it was transferred to its present situation, on the side of the great cathedral square, opposite, instead of adjacent, to the small branch of the river.

In the thirteenth and fourteenth centuries a sick person was admitted as a patient by the sister who presided at the entrance. The patients were assigned to a ward. Having confessed to a priest and having surrendered their clothing to a caretaker, they were put to bed naked, except for a night cap. Until the beginning of the nineteenth century it seems to have been unusual for the poor to wear any clothing in bed. It was a rare and unusual thing for a patient to enjoy a single bed. Usually the patients slept two or three in a bed, and in time of famine or pestilence, when the wards were crowded, it was often necessary for six or eight persons to sleep together. The beds were large, four-poster beds, fitted with feather pillows, huge bolsters and straw mattresses resting on cords in place of springs. The supply of linen was plentiful, a thousand sheets being the allowance for a week in a ward. In winter quilts, lined with fur, were used to keep out the cold. No diagnosis was made on admission, and patients were sent to the ward with most room. The records are silent as to the presence of the physician or the surgeon before the thirteenth century, but some professional treatment was provided from the beginning of the fourteenth century. Simple as were the arrangements of the Hôtel Dieu before the opening of the eighteenth century, it must have done much good. It provided home, food and warmth to the poor and destitute.

At the present time hospitals are enriched with costly carving in stone, with marble and with brass. Money is not spared in surrounding the sick in public institutions with the symbols of wealth. The Hôtel Dieu benefited from century to century from the same spirit. Much rich furniture from the palaces of the kings and the castles of the nobles reached the institution. Royal orders gave the hospital the straw of the palace of Louis IX. during his absence, the right to take a quantity of wood from the forests and the privilege of feeding the hospital's herd of pigs in the royal forests. Henry of Navarre paid much attention to the Hôtel Dieu. During his siege of Paris in the War of the Leaguers he despatched wine and wheat from Chartres for the relief of the patients. After his accession to the throne of France he rebuilt the St. Thomas and St. Denis wards, replacing the double arch of the halls by a single span. From this time onward the hospital had a period of great prosperity until the declining years of *Le Grand Monarque,* Louis XV., had difficulty in financing the hospital. Neckar undertook the reconstruction of the Hôtel Dieu and its establishment on a sound footing. His influence remained after his fall, and the latter-day prosperity is due to this statesman's policy.

While little is known of the medical organization of the Hôtel Dieu in its early years, there are abundant records about the administration of the hospital. From these records it appears that the control of the hospital passed from the Bishops of Paris to the Cathedral Chapter of Notre Dame. The hospital was under the direct care of the Master chosen from the Augustinian Brothers, who laboured in the hospital and who were mostly laymen. The Master had charge of the farms and vineyards belonging to the institution, and was responsible for the chapel, the cellar, the bakery, the alms, the benefices and the returns of the immense establishment. From the nursing sisters was elected a prioress or mistress, who had charge of the nuns. The sisters lived under monastic rules and restrictions. In the seventeenth century they numbered one hundred and twenty. They started their career in hospital service in a lay capacity, and were styled *filles blanches.* After five or six years' probation they became full sisters, provided they served as a novice for one year prior to taking the vows. The story of their noble charity over a thousand years is the most noble monument of the history of the Hôtel Dieu.

HEROIN POISONING.

The important case of heroin poisoning reported in last week's issue of this journal by Dr. W. R. Boyd demands the attention of medical practitioners. Although the case is a rare one, and the circumstances under which the death took place are unlikely to be repeated, the possibility of the occurrence of this form of poisoning should be born in mind in any sudden illness characterized by narcosis, coma and tetanic symptoms, in order that prompt steps may be taken to prevent a fatal issue.

Heroin is a name introduced by Dreser in 1898 for diacetyl morphine. He recommended this drug

as a safe sedative and mild narcotic in the place of morphine. The dose prescribed was 0.01 gramme. It was soon found that its sedative effects lasted longer than those of morphine, but that when it was given in doses larger than 0.01 grm., it was apt to cause general constitutional disturbance, giddiness, and signs of collapse. Definite poisoning was reported after a dose of 0.02 grm.. Carbonell y Soles was the first to describe a serious case of poisoning. The patient took 0.167 gramme by mistake, and notwithstanding the immediate application of counter remedies, desperate symptoms ensued. These were intense weakness, bradycardia, collapse with a low temperature, myosis and disturbance of vision, and clonic spasms of the extremities. The patient eventually recovered. In 1902 Carlos de Vicente recorded the case of a man of 42 years, who swallowed 0.6 grm. of heroin hydrochloride in 100 c.cm. of water by mistake. This man was suffering from a gastric disturbance, and it is thought that the presence of an excess of mucus in the stomach delayed the absorption of the drug. Vomiting was effected after the lapse of two hours and stimulation by various means was resorted to. Unfortunately no chemical analysis of the recovered contents of the stomach was made and consequently it is not known how much heroin was absorbed. The amount was probably small as no profound sleep or coma appeared. The symptoms were largely subjective and may have been due as much to fear as to the effects of the drug. The pupils were slightly contracted, but the pulse-rate was not slowed and there was no actual collapse. According to Lepine, who has studied the physiological action of the drug on laboratory animals and has watched its pharmacological action in man, heroin does not induce tetanizing symptoms, and exerts no influence on the blood pressure or on the cardiac ganglia. He claims that heroin is much less toxic than morphine. The majority of authors, however, find, as Dr. Boyd did, that spasms of the limbs occur when large doses have been exhibited.

Dr. Boyd's observation, as well as the experience in Vincente's case, would indicate that large doses are absorbed slowly. The fact that a full narcotic effect was not present in Vincente's patient two hours after he had taken 0.6 grm., although no vomiting had taken place by that time, is certainly significant. In Dr. Boyd's patient sleep ensued within an hour of a smaller dose and there was twitching of the face at the end of two hours. Strong clonic spasms of the leg muscles were evident four hours after the heroin had been taken. It was probably too late then to have prevented the fatal issue, even if it had been realized that a narcotic poison had been given in the place of sedative prescribed. It must therefore be assumed that the tetanizing action of heroin may manifest itself after doses of from 0.02 or 0.03 grm., although a fatal issue will follow very slowly after twenty times this dose. The obvious remedies for poisoning by heroin or other morphine derivatives include an attempt to prevent absorption by emesis, stimulation with caffeine or strychnine and an endeavour to counteract the action of the alkaloid by atropine.

THE ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, SYDNEY.

The thirty-eighth annual meeting of subscribers to the Royal Alexandra Hospital for Children, Sydney, was held on May 1, 1918, when the annual report and balance sheet were received and adopted and the members of the honorary medical staff were thanked for their services during the year, the Government and the Legislature were thanked for the financial assistances extended, and His Excellency the Governor was thanked for presiding and Lady Davidson was thanked for attending the meeting. The annual report has now been printed in book form, together with the medical report, the Matron's report, many pages of donations, endowments and subscriptions and a large series of reproductions of excellent photographs of the little patients in their cots. The book is attractively got up, and should serve to secure the support of the generous. Unfortunately, the technical medical records are too brief and too generalized to be of much practical value.

During the course of the year 3,785 children were admitted. There were at the beginning of the year 158 in the Hospital. The number of those discharged was 3,502 and the number of deaths was 291. The total mortality, calculated according to the formula of the Registrar-General, was 7.67%, and not 7.3%, as given in the report. Those responsible for the compilation of hospital statistics should learn that it is not justifiable to claim lower mortality rates by the transparent expedient of making the calculations on the basis of the sum of the patients admitted during the year and of the patients in residence at the beginning of the year. The Registrar-General overcomes the difficulty by working on the mean between the number of patients admitted and the number of patients discharged and dead.

In the report it is stated that 14,569 children were attended as "casualty cases." In the statistical summary it appears that the attendances in the Casualty Department, and not the patients, reached this number. In the Out-Patient Department 15,488 children were attended. The total number of operations performed during the year was 2,057, including a large number of minor procedures.

In response to the increased demand for admission to the Hospital the accommodation was increased during the year and additional property has been bought, in anticipation of still further extension. The number of cots in the Hospital in May, 1918, was 200. Shelters and treatment rooms have been erected in a selected portion of the grounds for the treatment of children suffering from gastro-enteritis.

It is stated that the honorary medical staff suffered further depletion by several members going on active military service. Temporary appointments to fill the vacancies thus caused were made. Dr. E. A. D'Ombrain resigned his position as honorary ophthalmic surgeon. Dr. A. E. Wallace Welhen was appointed in his stead. Dr. Alexander Dunn was appointed ear, nose and throat specialist and Dr. C. Norman Paul skin specialist. A considerable amount of work was conducted in the special departments. It appears from the summary that some nurses of the Hospital are required to visit infants at their homes suffering from gastro-enteritis. During the course of the year 94 children were visited in this manner, and the total number of visits paid was 679. The nurses are also required to undertake the surgical dressing of infants in their homes. The number of visits paid for this purpose was 1,470 and the number of children handled was 70. A series of tables is published, giving the disease from which the patients were admitted to hospital, the number of patients cured, relieved, unrelieved and of those who died, and a general summary. Some of the information contained in this record may be useful for reference purposes in regard to case mortality. A list of operations is also appended.

William Henry Norman Randall, Esq., M.B., Ch.M. (1918, Univ. Sydney), of the Royal North Shore Hospital, St. Leonards, has been nominated for election as a member of the New South Wales Branch of the British Medical Association.

Public Health.

THE HEALTH OF AUSTRALIA.

Infective Diseases Notified in Australia During the Quarter Ending September 30, 1918.

	New South Wales.		Victoria.		Queensland.		South Australia.		Western Australia.		Tasmania.		Commonwealth.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.[1]	Deaths.
Enteric Fever	113	19	36	2	45	3	7	0	23	3	14	2	238	29
Scarlatina	404	9	1,351	18	125	3	197	3	248	1	9	1	2,334	35
Diphtheria	1,323	48	3,575	70	726	23	459	31	287	8	124	4	6,494	194
Pul. Tuberculosis	411[2]	288	562	262	136	84	114	97	84	69	32	21	—	824[3]
C'bro-Spinal Menin.	40	24	23	6	3	2	5	3	2	1	3	2	76	38
Poliomyelitis	13	1	20	3	1	1	0	1	1	0	2	1	39	7
Malaria	3	1	0	0	5	3	1	0	2	0	—	0	—	4
Puerperal Fever	—	26	12	13	11	6	0	1	0	2	6	1	—	49
Septicæmia, Pyæmia	—	14	0	10	—	5	—	1	5	2	—	0	—	32
Bilharziosis and Hæmaturia	—	0	—	0	1	0	0	0	1	0	0	0	—	0
Morbilli	—	26	0	2	—	1	22	0	—	0	—	0	—	29
Pertussis	—	16	—	18	—	6	225	0	—	5	—	3	—	48
Ophthal. Neonatorum	—	0	—	1	—	0	0	0	0	0	2	0	—	1
Erysipelas	—	3	0	5	30	2	48	2	24	3	—	1	—	16
Anchylostomiasis	—	0	—	0	8	0	0	0	—	0	—	0	—	0
Favus	—	0	—	0	—	0	2	0	—	0	—	0	—	0
Beri-Beri	—	0	—	0	—	3	—	0	1	0	—	0	—	5[4]

[1] The total number of cases notified is not given of those diseases which are not notifiable in all the States.
[2] Notifiable only in portion of the State.
[3] Including three deaths in Northern Territory.
[4] Including two deaths in Northern Territory.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending January 18, 1919:—

	Metropolitan Combined District.		Hunter River Combined District.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	14	0	1	0	12	0	27	0
Scarlatina	5	0	0	0	11	0	16	0
Diphtheria	24	0	3	1	32	0	59	1
*Pul. Tuberculosis	22	9	0	0	0	0	22	9
C'bro-Sp'l Menin.	1	0	0	0	0	0	1	0
Malaria	0	1	0	0	0	0	0	1

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the fortnight ending January 26, 1919:—

	Metropolitan.		Rest of State.		Total	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	10	0	8	0	18	0
Scarlatina	37	0	34	0	71	0
Diphtheria	65	2	99	2	164	4
Pulmonary Tuberculosis	38	21	21	10	59	31
C'bro-Spinal Meningitis	0	0	2	1	2	1
Puerperal Fever	3	0	0	0	3	0

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the fortnight ending January 25, 1919:—

Diseases.	No. of Cases.
Enteric Fever	30
Scarlatina	5
Diphtheria	37
Pulmonary Tuberculosis	13
Erysipelas	5
Anchylostomiasis	2
Puerperal Fever	1
Poliomyelitis	6
Dysentery	2

NEW ZEALAND.

The following notifications have been received by the Chief Health Officer, Department of Public Health, Hospitals and Charitable Aid, New Zealand, for the six weeks ending January 20, 1919:—

Diseases.	No. of Cases.
Scarlatina	73
Diphtheria	183
Enteric Fever	21
Pulmonary Tuberculosis	83
Cerebro-Spinal Meningitis	31
Puerperal Fever	4
Erysipelas	2
Ophthalmia Neonatorum	2
Hydatids	2
Trachoma	1
Morbilli	109
Influenza	1533

The incidence of influenza since the first cases were notified is as follows. It will be seen that the returns do not include any cases in the Auckland District until the week ending December 16, 1918.

Week Ending—	Auckland District. Cases.	Wellington District. Cases.	Canterbury District. Cases.	Otago District. Cases.	Totals. Cases.
November 11, 1918	—	97	14	3	114
November 18, 1918	—	219	258	120	597
November 25, 1918	—	220	140	358	718
December 2, 1918	—	376	255	398	1,029
December 9, 1918	—	342	445	292	1,079
December 16, 1918	46	249	168	57	520
December 23, 1918	7	290	14	28	339
December 30, 1918	1	262	11	3	277
January 6, 1919	37	103	0	4	144
January 13, 1919	92	12	3	9	116
January 20, 1919	1	132	2	2	137
Totals	184	2,302	1,310	1,274	5,070

Abstracts from Current Medical Literature.

ORTHOPÆDIC SURGERY.

(46) Cystic and Fibrocystic Disease of Long Bones.

The literature of fibrocystic disease of bones is reviewed by H. W. Meyerding (*Amer. Journ. Orthop. Surg.*, September, 1918). Fibrocystic changes may be general or local. The local type occurs usually in the growing period. The proximal ends of bones are chiefly involved, and the femur, humerus, tibia and fibula are most frequently attacked. The tumour may be unilocular or multilocular. The symptoms vary, pain and local swelling being usually present, though a fracture may be the first indication of the disease. In some there is tenderness, atrophy and deformity. The diagnosis depends on the history, physical and radiographic examination. Certainty is only possible after incision and pathological examination. Malignancy has to be determined, as on this often depends the fate of the limb. Sarcoma can not be distinguished by X-rays; carcinoma may be. The intense pain of the latter helps to distinguish it. Syphilis and osteomyelitis are excluded by the usual methods. The disease usually appears before the age of thirty; it always attacks the diaphysis, and the growth is slow. When a single cyst is present the site is usually the centre of the bone, where it grows at the expense of the cancellous tissue. There is no thickening of the periosteum. If the condition is multilocular the radiogram presents a series of translucent areas, surrounded by striæ of irregular outline. The cortex becomes encroached upon, the periosteum becomes irregular and bulges. In the author's experience surgical treatment is most satisfactory. The indications for operation are interference with function, deformity, pain from pressure or prevention of fracture. Total excision with bone grafting is not necessary, as curettage and crushing of the cysts give good results. General fibrocystic disease is a metaplasia of long bones, resulting from some metabolic process. The symptoms are vague. The radiogram shows the periosteum to be normal, the cortex thin and fused with the medulla, which is being replaced by fibrous tissue.

(47) Excision of Septic Joints.

The first consideration in treating septic joints is the position in which they are to be fixed. Robert B. Osgood (*Amer. Jour. Orthop Surg.*, October, 1918) follows the angles laid down by Sir Robert Jones, and suggests a slight exaggeration of the position whenever gravity will tend to decrease the angle of fixation after retentive apparatus has been removed. The second and more serious consideration is drainage. Apparatus to keep the wound free from pressure, to prevent the patient lying on his wound, and to bring about immobilization is necessary. The temptation to remove all bone fragments and trim up bone ends should be avoided when ankylosis is desired. The author thinks that ankylosis in a good position is a vastly superior result to a small degree of stable movement, or to a large degree of imperfectly controlled movement. This particularly applies to the hip, knee, ankle and shoulder joints. The one exception is the elbow joint which, in a few trades, may be more serviceable even when flail, though an apparatus is usually necessary. Drainage after excision is discussed. In the shoulder excision leaves a dead space, hard to close and favouring pocketing. The cases the author has seen have all done badly, and sepsis has been more difficult to control after the operation. Reference is made to Scudder's series of excisions in civil life, where without sepsis the end result was far from satisfactory. Excision of the elbow is also unsatisfactory, and does not solve the problem of sepsis. The wrist may yield a better result if there is not too much bone involved. Experience with the hip joint was limited to two cases, in both of which some restriction of function might be expected, while the removal of the necrotic head helped to control the sepsis. In the knee the result in the presence of sepsis was not encouraging; in the ankle amputation at the point of election is preferable to the battle with infection. His conclusions were that in no case was the sepsis more easily controlled than without the operation of excision. Nearly all that patients had persistent sinuses.

(48) The Structure, Form and Conditions of the Ends of Divided Nerves.

When a nerve is divided it retracts, and the nerve fibres undergo a process of degeneration followed by regeneration (Edred M. Corner, *British Jour. Surg.*, October, 1918). The fibrous elements of the nerve undergo only one process, that is immediate repair. In early stages, therefore, the end bulbs are mostly fibrous tissue, and by the time the nerve fibres commence to grow a considerable barrier exists. The varying density of the scar tissue leads to the formation of the plexiform neuroma. In the central end of the divided nerve the ascending neuritis leads to the separation of the nerve bundles by fibrous tissue; this is more marked in the central portions. A nerve bulb is formed by dividing the epineurium, perineurium and endoneurium at the same level. A nerve pencil follows division of the perineurium and endoneurium at one level and of the epineurium at a lower level so as to form a covering to the stump. Nerve fibres grow from the bulbs into any connective tissue scaffolding. Adhesions are usually formed by fibres which escape from the side of the bulb into surrounding tissue. The cause of pain in bulbs is partly due to the increase of intrabulbar pressure, but pressure following the irritation of infective inflammation is the main factor. As a practical method of dealing with nerve ends, the author uses that of the "swing door." The nerve is drawn down, divided by two cuts, one from each side, and then allowed to retract, the backward movement closing the flaps like swing doors.

(49) Injuries of Peripheral Nerves.

As a routine preliminary to surgical treatment H. S. Soutta and E. W. Twining (*Brit. Jour., Surg.*, October, 1918) examined the sensory, trophic and muscular disturbances of 128 cases. Electrical tests were only considered of value in distinguishing from functional disturbances. In the case of galvanic stimulation they contend that sluggish relaxation is the most valuable sign of paralysis. The whirlpool bath was found to be the most powerful physical method of treatment in the care of limbs before operation. In cases where the ordinary electrical treatment was painful the Wilson modulator was very useful. In this machine the galvanic oscillation is too slow to stimulate normal muscle, though the paralysed muscle responds to it. The authors believe that the danger of stretching a paralysed muscle has been greatly exaggerated, and that splints should not place limbs in strained or abnormal positions in an endeavour to procure rest. At operation the damage to the nerve was always found to be greater than was indicated by preliminary examination. The experience favours complete resection of a nerve with end-to-end suture in all cases where there is not some obvious reason for taking some other course. The removal of bone is advocated, if approximation is not otherwise possible. Tension is relaxed at the end of one week in limbs which have been fixed to secure approximation of nerve ends.

(50) The Anatomy and Physiology of Tendons.

Leo Mayer (*Jour. Amer. Med. Assoc.*, October 12, 1918) applies recent studies to the technique of tendon operations. He describes a paratenon, an elastic structure placed between the tendon and the covering fascia, which should be preserved in operations, as it constitutes part of the gliding mechanism. The tension of tendons was determined in experiments on dogs by dividing a tendon and ascertaining the amount of force necessary to restore the relationship of the divided ends. In the anatomical arrangement, when the attachments were placed in the closest proximity, the tension equalled 0. The application of this fact in transplantation is to suture the transplanted tendon, without tension, to the new position only after the parts have been arranged to represent the position of maximum function. He describes a typical transplantation, and lays stress on the avoidance of drying of the tendon from exposure, and on the use of the tendon sheath of the displaced muscle to accommodate the tendon of the transplanted one. The paper is illustrated by photographs of sections illustrating the anatomy of tendons.

MORPHOLOGY.

(51) Neuromeres and Metameres.

H. V. Neal in the *Journal of Morphology*, Vol. 31, No. 2, September 20, 1918, discusses the interpretation of the neuromeres of vertebrate embryos, concerning which two suggestions have been put forward. (1) The non-phylogenetic interpretation is that neuromeres are either artefacts due to the action of fixing agents, or transient embryonic structures, resulting either from longitudinal compression of the neural tube, or to the local strain of the related nerves. (2) The phylogenetic interpretation is that neuromeres are the visible remnants of a primitive segmentation of the nervous system, and consequently reliable clues to the original number of metameres in the vertebrate head. He attacks the problem on the basis of the evidence presented by the central nidular relations of the motor cranial nerves in preparation of squalus embryos, and upon the data supplied by comparative embryology. The idea that neuromeres are artefacts may be dismissed at once, as they are visible in the living embryo. That they are the mechanical result of the pressure of adjacent somites is very probable in the trunk region, where they develope along with the mesodermic somites, and disappear later as they lose their rounded form and close contact with the wall of the neural tube. The hind-brain neuromeres (rhombomeres), however, never show a regular alteration with the mesodermic somites, and they persist in the medulla long after all traces of mesodermic somites disappear. Further, in some embryos the rhombomeres appear as local paired thickenings on the wall of the medulla. The differentiation of a typical rhombomere occurs independently of connexion with a cranial nerve root. This proves conclusively that rhombomeres may not be interpreted as the result of mechanical pull of nerve roots, and the possibility of a phylogenetic interpretation must be granted at least for rhombomeres. The metameric importance of neuromeres is indicated by the following points: (1) The ancestors of chordates were metameric animals, with a metameric nervous system. (2) In accordance with the law of biogenesis this ancestral metamerism or neuromerism should show itself autogenetically in the central nervous system of vertebrate embroyos. (3) Such segmentation has been shown in the embryos of many classes of chordates. (4) In the region of the medulla the neuromeres appear to have constant relations with the visceral arches. However, in striking contract with mesomeric segmentation, the neural segmentation is more conspicuous in the embryos of higher chordates than in the lower and more so in the head than the trunk. Rhombomeres may have arisen in adaptation of branchiomeric segmentation. The central nidular relations of the rhombomeres throw doubt on the belief that neuromeres are trustworthy criteria of the metamerism of the head, and so undermine the idea of metameric value of neuromeres. The chief evidence of the metameric value of neuromeres consists in their neumerical correspondence with the mesodermic somites, but this only obtains for the primary brain vesicles in the head region of vertebrates, and not to the secondary subdivision of those. Except in the case of neuromeres ii and iii (Neal) the motor nerve relations do not accord with the supposition that these are metameric structures.

(52) The Hypophysis Cerebri.

In the *American Journal of Anatomy*, Vol. 24, No. 3, Wayne J. Atwell studies the development of the *hypophysis cerebri* in the rabbit (*Lepus cuniculus*). It has long been customary to consider the hypophysis as composed of two parts. One, known as the anterior lobe, is that portion derived from the ectodermal mouth invagination—and, according to certain authors, augmented by addition from the entoderm. The other, known as the posterior lobe, is that part developed from an outgrowth of the floor of the third ventricle of the brain. This usage is still common in modern test-books of anatomy and embryology. The author demonstrates that this description is inadequate. The *pars anterior* is made up of an irregular network of cell-cords, between which lie large, irregular shaped blood-vessels. A small amount of connective tissue intervenes between the wall of the blood-space and the glandular paneuchyma. The *pars tuberalis* is a thin layer lying in the *pia mater*. It exhibits a distinct tubular or alveolar structure. The wall of the tubule, when cut squarely, is seen to be made up of a single layer of cells, which are cubical or low columnar. The *pars intermedia* is a relatively thin epithelial strip, very poorly vasculanized, and lies close to the neural lobe or infundibular process. Many writers emphasize the fact that the *pars intermedia* is inseparably bound to the neural lobe. After an attempt at mechanical separation of the so-called anterior and posterior lobes, it is almost invariably found that a thin epithelial layer, the *pars intermedia*, has remained adherent to the neural lobe. An endless chain of discussion has been evoked by the question as to whether the epithelial hypophysis (represented by the *pars anterior*, *pars intermedia* and *pars tuberalis*) is derived from the entoderm or from the ectoderm, or whether it is compounded of elements derived from both of these germ layers. Atwell can find no evidence for asserting that the entoderm contributes to the formation of the hypophysis of the rabbit. With the exception of this paper all recent studies on the morphogenesis of the hypophysis have been confined almost exclusively to the epithelial portion of the gland. The age of all the rabbits referred to in the paper are counted from the time of insemination to the time the embryos were obtained. The study commences at the 10-day stage, and advances at intervals of one day to the 30-day stage. The latter practically represents the condition of development of the hypophysis of the rabbit at birth. The three epithelial parts of the gland, *pars anterior*, *pars intermedia* and *pars tuberalis*, are histologically distinct at this time. At the 10-day stage the hypophysis is well indicated, possessing sixteen pairs of primitive segments and a seventeenth partly formed. To Tilney must be given the credit of having been the first to show that the *pars tuberalis* has its origin in two secondary diverticula or sprouts from the body of the pituitary sac. These sprouts ultimately fuse across the median line, and assume their juxta-neural position. Herring attributed great importance to the early and close union between the buccal and cerebral portions of the hypophysis. During the course of the study it was noted that at the 16-day stage an intimate relation existed between neural lobe and intermediate part. This condition was found constantly present in all specimens examined of this age, as well as in some 15, 17, 18, and 20-day embryos. At the 19-day stage the interest attaches to the lateral lobes. They are united in the mid-line, and each is sending out a pair of blunt nasal horns and a pair of caudal horns. The nasally-directed horns extend toward the optic chiasm, lying close to the brain wall. The caudal horns surround the neck of the neural lobe. From the richness of its blood-supply it is generally believed that the secretion of the anterior lobe enters the vascular system directly. Herring, on histological grounds, believed that the *pars intermedia* sends its secretion into the neural lobe, and thence into the cerebro-spinal fluid. This view was confirmed by Cushing and Goetsch by the injection of concentrated cerebro-spinal fluid, which produced the characteristic reactions of extracts of the posterior lobe. Structurally, there are three possibilities for the absorption of a secretion from the *pars tuberalis*. One is that the secretion is given off into the cerebro-spinal fluid, in the subdural or the sub-arachnoid. The second is that the secretion is taken through the brain floor and enters the cerebro-spinal fluid in the third ventricle. The third possibility is that the secretion is absorbed directly into the blood vessels. Their relative abundance would be in favour of such a view. Physiologists recognize two very different internal secretions as being produced by the hypophysis. One is obtained from the posterior lobe, and causes a marked rise in bood-pressure, increased secretion of urine and milk, a general contraction of involuntary muscle, especially of the uterus, etc. The other is obtained from the anterior lobe, and does not markedly influence blood-pressure on introduction into the circulation, but is thought to influence body growth, particularly of the bones. It is held that the secretion attributed to the posterior lobe is in reality not formed by the nervous portion of the hypophysis, but by its epithelial covering the *pars intermedia*.

British Medical Association News.

SCIENTIFIC.

At a clinical meeting of the Victorian Branch, held on October 2, 1918, at St. Vincent's Hospital, Melbourne, Mr. H. B. Devine exhibited a series of cases to demonstrate the after-results of operations for carcinoma of the rectum. The cases were arranged into three groups. In group (*a*) the rectum and anal canal had been removed through the coccygeal route, with conservation of the sphincters and implantation of the lower portion of the sigmoid into the denuded sphincter. Three patients were shown. In two the operation had been performed nearly three years before and in the third about nine months previously. The patients were quite continent, but could obtain an action of the bowels only by enemata. Two other patients had been operated on in a similar manner, and were well. In one case the operation dated 2½ years previously. Group (*b*) was reserved for the combined abdominal and perineal operation, with the formation of an artificial anus by the method described by Miles. One patient was exhibited. He had been operated on three years before for an extensive carcinoma of the rectum. He had learned to manage his artificial anus so well that it had become practically no disability to him. In group (*c*) one patient was shown. The operation had been begun by the coccygeal route, as in group (*a*), but as a satisfactory normal anus could not be obtained, it had been completed through an abdominal incision. In this case an artificial anus was made.

Mr. Devine reported that the results obtained by him in his series of cases of carcinoma of the rectum were as follows:—

Number of Cases.	Immediate Deaths.	Remote Deaths.
12 ..	1 ..	1 after 5 years
		1 after 12 months
		1 after 9 months

Mr. Devine also described a new operation for duodenal ulcer. The stomach was cut across in the pre-pyloric region; the cut end was twisted through a rent in the transverse mesocolon and united to the jejunum. The distal end was closed and the ulcer was thus left in a "dead end." Occasionally it was obliterated. In one case the patient had gained 12.6 kilograms. In five others the results had been uniformly good. X-ray photographs taken by Dr. Hewlett showed the satisfactory result of this new method of short-circuiting.

Mr. Devine exhibited a case of malunion of the tibia and fibula corrected after twelve months by re-fracture with subsequent correct apposition. The ends of the bones had been fixed by many sutures applied round the periphery of the bone. Very fine bronze aluminium wire had been used.

In the last place he showed a patient in whom he had performed an operation for decompression five years before for optic neuritis diagnosed to be due to tumour of the brain. The patient was still in moderately good health.

Dr. John Murphy showed two patients with chronic empyema of the maxillary antrum. A radical Caldwell-Luc operation had been performed and complete recovery had ensued.

His second patient was a man aged 21 years, suffering from recurrent laryngeal nerve paralysis on the right side. The man had dextro-cardia and aneurysm of the arch of the aorta (Dr. Lewers's case).

He also demonstrated the case of a girl, aged 23 years, who had had otorrhœa for two years. She was then attacked with acute otitis with mastoiditis. The symptoms were headache, vomiting and drowsiness. A radical mastoidectomy was performed, but as the headache and dulness persisted, after a week the roof of the operation cavity was removed and the *dura mater* exposed in the middle fossa. The membrane was seen to bulge and was therefore incised. More than 30 c.cm. of foul-smelling pus escaped. All the symptoms disappeared and perfect recovery followed.

Dr. Murphy's fourth patient was a man, aged 62 years, who was suffering from a syphilitic throat affection which was becoming malignant. The lymphatic glands were involved.

Dr. Murphy then demonstrated the use of the direct laryngoscope, bronchoscope and œsophagoscope, and showed how foreign bodies could be removed with their aid. In one patient, under the care of Dr. Morton, part of a plate of teeth was removed from the lower end of the œsophagus. In another patient, a boy of 10, a penny was removed from the upper end of the œsophagus. In the third patient two bones were removed from the bifurcation of the trachea and right bronchus respectively.

Numerous other patients and many pathological specimens were exhibited by members of the medical and surgical staff.

Medical Societies.

THE OPHTHALMOLOGICAL SOCIETY OF NEW SOUTH WALES.

A meeting of the Ophthalmological Society of New South Wales was held on November 6, 1918, at the Sydney Hospital, Dr. R. H. Jones, the President, in the chair.

Dr. F. Guy Antill Pockley reported that the patient suffering from monocular episcleritis who had been shown at the last meeting, had again been sent for the application of radium, which was refused. The condition was not any better.

Dr. F. Guy Antill Pockley read some notes on an unusual case of sarcoma of the iris. The patient was a man, aged 46 years, who first consulted him on February 13, 1917. He gave a history of epiphora in the left eye of five years' duration. The colour of the eye had changed during the past two years from bright blue to brown. He had had severe headaches, and for two months much pain in the eye. The vision was failing. On examination it was found that the right eye was apparently normal. The iris was light blue in colour. The vision was $^{6}/_{5}$. The left eye was in a condition of moderately acute glaucoma. The tension was + 2, and with Schiötz's tonometer the corneal impressibility was sufficient to yield pulsation on two divisions with the third weight (10). The pupil was half dilated. The anterior chamber was deep. The cornea was hazy as a result of tension. The iris appeared to be dark brown in colour and to be flat. There were no signs of a tumour. Toward the limbus on the nasal side the iris was bright blue. There was a faint uniform reflex from the fundus, but no details were visible through the hazy cornea. No spots of keratitis punctata were detectable through the corneal haze.

A cyclitic condition was suspected, on account of the deep anterior chamber and of the history of a change in the colour of the iris. Eserine, purgation and leeches were tried without benefit, and on the second day the patient was informed that an operation was necessary, notwithstanding a considerable risk. A sclero-corneal trephining, with a complete iridectomy, was performed. The eye recovered without any reaction. Four days later a few spots of exudate were seen on the anterior surface of the lens capsule, and three or four spots of definitely pigmented keratitis punctata on the back of the cornea. Save for heterochromia the iris appeared normal. The fundus was hazily seen. The vision was $^{6}/_{24}$. On April 1, 1917, the vision of the left eye was $^{6}/_{6}$ with — 0.5 sph. and — 0.5 cyl., and a few letters of $^{6}/_{5}$. He was not seen again until July 9, 1917, when the vision was unchanged, but large masses of a cheesy-looking substance of a slightly browner colour than cheese were seen all over the anterior surface of the iris. The pupil reacted readily to light and the eye was quiescent. No keratitis punctata was visible. No satisfactory explanation of the condition was forthcoming. The patient was treated with large doses of potassium iodide and mercury by inunction. Dr. R. H. Jones saw the patient in consultation ten days later, and recommended a continuance of the treatment, notwithstanding the fact that he too was unable to make a diagnosis. Five days later the patient had an attack of acute iritis and keratitis, with hypopyon. The tension at that time was + 2. This condition yielded to treatment with atropine, and nine days later the eye was in exactly the same condition as before the attack, with the exception that the vision was $^{6}/_{6}$ (partly), and the tension was still somewhat raised. The condition remained unaltered for about six months.

The patient was next seen on September 23, 1918, when he stated that his vision had been failing for about six months. There was a cataract in the left eye, marked gross keratitis punctata, presenting a greasy appearance, and some

spots of the same character in the anterior capsule. The appearance of the iris was the same as that seen a year before. There was a large hypopyon-like substance in the anterior chamber, having a coarse granular appearance. It looked just like wet coffee grounds. Excision was recommended. Sections of the iris revealed typical multiple melanotic sarcomata. Specimens of the growths were exhibited.

Dr. F. Guy Antill Pockley also showed two cases of retinal glioma, and demonstrated the growth and microscopical sections of it. The first case was in an infant of eight months, who had been very ill with an attack of *purpura hæmorrhagica*. The mother noticed that the vision in one eye was faulty immediately after this attack. There was no family history of disease. The second patient was an infant of 18 months. The mother was blind in one eye. There was cataract and no projection. There was a partial cataract in the other eye. The fundus was obscured. Her mother was also blind in one eye. The cause of the blindness in this case was unknown. The father had had both eyes removed by the late Dr. Odillo Maher for glioma in infancy. Two of his sisters had had both eyes removed for "growths" in infancy. Dr. Maher had reported a case with a striking history of glioma some years before. Dr. Pockley thought that it was possible that his patient was another member of the same family.

Dr. Hugh G. Allen referred to some notes that he had read twelve months before of three cases of sarcoma of the choroid and one case of glio-sarcoma. The specimens shown of these cases illustrated the four stages of the disease: (*i.*) the early stage, resembling a simple detachment of the retina; (*ii.*) the stage of increased intra-ocular tension, or the glaucomatous stage; (*iii.*) the episcleral stage, or the fungating stage; and (*iv.*) the metastatic stage. He ventured to express the opinion at that time that malignant disease of the eye was not as rare as some ophthalmic surgeons appeared to think. Since reading these notes he had had three cases for operation on account of malignant disease of the globe of the eye, and one case under observation for the same condition, in which the patient refused to submit to operation. He wished to demonstrate a patient who had been seen at the Out-Patient Department of the Newcastle Hospital. The patient complained for loss of vision in the right eye. Examination of the fundus revealed a moderately large detachment of the retina over the lower and outer quadrant. It appeared to be a simple detachment. The vision on the right side was reduced to the ability to count fingers at one metre. No alteration was detected in the pupillary red reflex, when the light was placed below the area of the detachment and as far posteriorly as possible. Dr. Allen stated that events subsequently proved that he could not have carried out the observation as correctly as was necessary. The eye contained a neoplasm far forward, and it must have been of a considerable size to have produced so large a detachment of the retina. The patient was told of the detachment, but the presence of a neoplasm was not diagnosed from the clinical signs. The patient was not seen again for some time. When he came again he had an attack of acute glaucoma in the right eye. Enucleation was then advised, as it was recognized that there was probably a neoplasm in the eye. No fundus examination was possible, on account of the corneal haze. The patient refused to have the eye removed, and therefore a large iridectomy was performed. The eye became quiescent, and the patient returned to his work for several months. At a later date the eye became painful at times and injected. The patient was often compelled to leave his work for a day on account of the pain. The patient then agreed, although reluctantly, to enucleation being carried out. This was done three months after the iridectomy. The specimen was exhibited. The eye contained a neoplasm filling about two-thirds of the globe. There was no extension of the tumour in the orbit, and so far there had been no recurrence. Professor Welsh diagnosed the growth as an endothelioma. In conclusion, Dr. Allen stated that he had shown the case because the detachment of the retina was more like a simple detachment than a malignant one at the first examination. It was interesting that the iridectomy relieved the condition for at least two months, and during this time the fundal picture remained unaltered. Endotheliomata, which were growths from the endothelial cells of the lymph spaces, were, in the opinion of the majority of authorities, rare forms of malignant tumours of the eye.

STATE CHILDREN IN QUEENSLAND.

The annual report of the Director of the State Children's Department in Queensland for the year 1917 has recently been issued. It contains a mass of information, much of a very sad character. During the course of the year 1917 no less than 1,663 children came under the control of the Department for various reasons. In many cases the parents were unable to support the children, in others the mother or father or both were dead, in others again there was definite neglect on the part of one or both parents, while a considerable class represented the result of illegitimacy. The care extended by the State in many instances was of a temporary nature, while the mother was in hospital and the father was unable to look after his children. The Act provides for the discharge from the care of the State of the children at the age of 18. Under special conditions the control may be continued until the child attains the age of 21. State children boarded with their own mothers or other female relatives are discharged at the age of 14, but the assistance may be continued for two years when deformity or permanent ill-health is present. In the year 1917 1,233 children passed out of State control, 71 of whom had died. The total number of children under the care of the Department was 6,194. Of these, 3,499 were boarded out with female relatives, 995 were placed in institutions, 887 were boarded out with foster mothers, 500 were hired out, 237 were released on probation, 63 had been adopted and 13 were in hospital. The State children are required to attend school up to the age of 14, and are not allowed to be sent out in service before this age is reached.

Institutions.

There are 16 institutions licensed for the purposes of the Act. Of these, five are State institutions, five are controlled by the Roman Catholic Sisters of Mercy, three are controlled by the Salvation Army, two are controlled by the Anglican Sisters and one is controlled by the Methodist Church.

At the Diamentina Receiving Depôt, Wooloowin, Protestant children are received from the Southern District. During the course of the year 323 children were dealt with at this institution. They are kept as inmates until arrangements can be made to board them out with foster mothers. The second State institution is the Infants' Home at Wooloowin, which is a receiving depôt for children under two years of age. The number of infants dealt with was 128. The experience at this Home teaches that it is necessary to keep the little ones as inmates for a considerable period, on account of the precarious condition of their health at the time of admission. There were 26 deaths during the year. The third State institution is at Westbrook, and is a reformatory for boys. It is stated that boys under 13 years of age are not "as a rule" sent to this institution. The problem of the reformatory school and of the child delinquent is so difficult and so full of pitfalls that its satisfactory solution can only be hoped for after the whole subject has been freely discussed by those competent to express an opinion and after it has been determined which are the least dangerous measures to combat a national evil. A considerable proportion of the population of these homes comprises mentally deficient children. This fact is frequently not recognized, nor is it usually acknowledged that the driving power of imitation among a susceptible class of child is often greater than the inhibition arising from educational methods. At the Westbrook Home 110 boys were dealt with during the year, and 64 were still in the institution on December 31, 1917. The physical health of the inmates is supervised by Dr. Freshney, of Toowoomba. The Superintendent reports that the general conduct of the inmates had been better than he had anticipated. Only a few attempts at escape were made. The amount of petty quarrelling is said to have been reduced considerably. As each boy is admitted, he is subjected to an education test, and receives instruction in accordance with the way he passes through this test. The Superintendent has adopted expedients to make good the deficiencies in education in certain children who are found to be backward through neglect. In connexion with this point, we would urge that it is essential that the school teacher should be guided by a neuro-pathologist in his treatment of backward children. The evaluation of degrees of mental deficiency is essentially a medical problem, and it can only lead to disaster if the layman attempts to act without expert guidance.

The pedagogue inspectors of the Department of Public Instruction record that they had reason to be satisfied with the progress in the education of the boys. In addition to their school work, the elder boys are engaged at work in the farm, the garden and the dairy. Apparently, these boys are taught a great deal of the practical science of farming and dairying. It is stated that no claim is made of producing experts. Some building has been achieved by the boys and the garden also keeps them well employed. Swimming, walking, boxing and competitive gardening appear to be their chief recreations. A debating class is being instituted and some of the more intelligent lads took part in several discussions. The whole report of this reformatory leaves the impresion that the inmates are normal children, with a fair sprinkling of intelligence. Experience of other institutions would indicate that the majority of the children are not normal from the mental aspect, and that it is quite insufficient to give these children three years' care and some education.

The fourth State institution is the Rockhampton Receiving Depôt for Protestant Children of the Central District. Unlike the Diamentina Receiving Depôt, infants are admitted as well as older children. The number of children dealt with during the year was 100.

The fifth State institution is the Townsville Orphanage. This is said to be the only residential State orphanage, and the Director of the Department finds it necessary to seek an excuse for its existence. Apparently there is difficulty in securing homes in which the children could be boarded out. During the year 173 children were in the institution.

Of the five Roman Catholic institutions, two are situated at Nudgee, one at Neerkol and two at Wooloowin. At the St. Vincent's Orphanage at Nudgee Roman Catholic children are admitted from the age of two years upwards. After attaining the age of 14 they are hired out to service, while the responsibility of the Home ceases when they attain the age of 18. No less than 557 children were dealt with. At the Industrial School for Girls at Nudgee the lowest age for admission is 13. The majority of the girls are incorrigible, but those who have been guilty of immoral conduct, are not admitted. It is stated that the influence on the girls is for good, and that the results have been very gratifying. Twenty girls were dealt with during the year. Girls who have been guilty of immoral conduct are sent to the Industrial School at Wooloowin. There were 19 inmates during the year. The Meteor Park Orphanage at Neerkool harbours infants as well as children, and provides school for those between the ages of five and fourteen. The number of inmates during the year was 302. Infants are admitted with their mothers, but not without, at the Magdalen Asylum, Wooloowin, and are retained there until they are two years of age. The children are then transferred to the St. Vincent's Orphanage and the mothers are sent out to service.

The Industrial School for Girls at Yeronga is under the control of the Salvation Army. It is admitted that many of the children in this home are of weak intellect, and "it is difficult to say what will become of them." The next sentence, in our opinion, contains a tragedy. "Any girl who, on reaching the age of 18 years, is not considered competent to take care of herself is retained under State control for another year, and is not discharged until the Matron reports it is quite safe to do so." A little knowledge of these children teaches that it is never safe. The number of girls dealt with was 34. The Salvation Army opened, on November 30, 1917, an Industrial School for Girls at Toowong. This school is for immoral girls of the Protestant faith. There were three inmates.

The Industrial School for Boys at Riverview gave shelter to 39 boys, who received good instruction in the school, under the supervision of the Department of Public Instruction.

The Industrial School for Girls at Clayfield is in the charge of the Anglican Sisters. Protestant children who are regarded as incorrigible are admitted. The majority of the girls are over 13 years of age. There were 32 girls in the home. It is stated that, while the conduct of the inmates is recorded as "on the whole very fair," good reports have been received of those girls who have been sent into situations. Another institution under the control of the Anglican Sisters is the St. George's Orphanage at Rockhampton. A licence was granted to this home, in order that the Anglican Sisters might continue to exercise control over the children born at the St. Mary's Maternity Home and their girl-mothers. There were five children in the institution during the year.

Mortality.

The total number of deaths among the State children during the year was 71. Forty of the children who died were under one year of age, twelve were boarded out with their own mothers, and 59 were under the full control of the Department. In no less than 34 children the cause of death was either gastritis or gastro-enteritis.

Boarding Out of Children.

It is stated that rigid control is exercised in regard to the type of woman selected as a foster-mother. It has also been found important to exercise continuous control, as some women perform their duties quite well at first and become negligent later. The foster-mother is paid 10s. a week for each child under two years of age, 8s. a week for those between two and fourteen in the Southern District and 9s. a week in the Central and Northern Districts. The foster-mother has to provide the prescribed clothing, while medical attendance and school requisites are paid for by the Department.

Arrangements are made for the boarding out of State children with their own mothers or with some other female relative under certain definite conditions. The person who receives monetary assistance for the maintenance of the child must take it into her own home. The home and the children are subject to inspection, and the Department has the power to remove the child if the conduct of the inmates of the home is unsatisfactory. Children remain under the control of the State until they attain the age of 14, but an extension for two years may be accorded for permanent ill-health or deformity. The State's support of children of widows who receive military allowances from the Defence Department in respect of their soldier sons was at first stopped, because it was held that the liability was a Commonwealth one. Subsequently it was brought to the knowledge of the Government that this arrangement resulted in a financial loss to a widow. The women whose sons have served at the front and who have received a military allowance, have now been paid the full State maintenance allowance for their children.

Hiring Out of Children.

The State children boarded out with foster-mothers and those in institutions may be hired out after reaching the age of 14 years until they are 18 years of age. The boys usually are sent to farms and the girls are placed in domestic service. During the year 500 State children were placed with employers under this arrangement. There appears, however, to be some difficulty in regard to dwellings for these children. In many cases the employer cannot accommodate a State child in his own home, and the question of the establishment of a cottage home for elder children is under consideration. The wages received by State children in service are invested in the Government Savings Bank in trust for the children. A sum not exceeding 1s. per week is handed to the child as pocket money. According to the Act, any money held in trust to the credit of a State child in the Government Savings Bank is paid into consolidated revenue on the death of the child, after the funeral expenses have been defrayed. The relatives of some of the State children who had been killed in action, before drawing the money standing at their credit, have claimed these sums. The Government has therefore reviewed the whole question and has decided:—

(*i.*) That in the case of soldiers who have been killed in action, all moneys are to be paid to the next-of-kin as if the section in the *State Children's Act* providing otherwise were non-existing.

(*ii.*) In ordinary cases, if there is a legitimate claim against the estate and the father or mother is living, the indebtedness to the State on account of maintenance is to be paid. If the mother and father are dead, the State to forego its claim, as the charge is really against the parents only.

The total amount of money held in trust for State children on December 31, 1917, was £32,958.

The Adoption of State Children.

The adoption of a State child is effected with the consent of both the Department and the mother of the child. The mother is required to sign a form of renunciation, and is not informed of the name of the person adopting the child. The child is inspected by the officers of the Department until it reaches the age of 18, but it is pointed out that the inspection is carried out in such a manner that the relationship

existing between the person and her adopted child is not disturbed. There is one great flaw in the arrangement. At present there is the necessity of the child being informed when she has reached a marriageable age that the persons she has known and loved as her father and mother, are not her real parents.

The Children's Court.

The work in the Children's Court is open to very many objections. Apparently there is no special magistrate and no special building for dealing with juvenile delinquents. Although it is illegal to lock up a child in a police cell, no other place is provided for the detention of children charged with offences. During the course of the year 443 boys and 52 girls were charged with various offences. The most common was larceny, while the second most common were offences against the defence laws. The charge of being neglected comes third, while offensive conduct, housebreaking, malicious damage, other offences against good order, receiving of stolen property, arson, obscene language, common assult, fraud and false pretences, forgery, unlawful killing, attempted murder and "other offences against property" complete the list in the order of frequency. Under the heading of "other offences" there were 64 prosecutions. The children were dealt with in the following manner. There were committed to institutions or to the care of the Department 107 children; 103 were convicted but not punished. In the case of 80 order was made for payment; 62 boys were committed to detention camps and other imprisonments; 52 were discharged, 37 were fined, 33 were bound over, 25 had their bail estreated, three were committeed for trial and three were ordered to be whipped. A little consideration will reveal that those responsible for the treatment of these children have no conception of the mental make-up which leads to the committing of the majority of the offences named. Fines, binding a child over, discharging a child or convicting it without any punishment are not remedies for the commission of an act due to the impulse of an improperly developed brain. We would wish to see special courts established and placed in the charge of magistrates who have had psychological training and who have as medical assessors practitioners specially trained in the physiology and pathology of brain development. The Director appends eight lines on the subject of defective children. He states that the Department had a few children mentally deficient boarded out with foster mothers. He also recognizes the necessity for the establishment of a special home for this class of child. It is quite obvious that the control of the mentally deficient child should be handed over to a board consisting of persons who understand something of the subject. The statement that the Department deals with a few mentally deficient children is evidence that the Director has not that knowledge.

The meeting of the Federal Committee of the British Medical Association in Australia, which was to have taken place on February 5, 1919, was postponed indefinitely, owing to the fact that New South Wales and Victoria were proclaimed quarantine areas on the 27th and 28th of January respectively.

Correspondence.

DETERMINATION OF SEX.

Sir,—J. E. Foley in your issue of 25th inst. quotes yours of 18th idem.,[1] as follows: "Observers have noted that one ovary is only capable of producing male offspring and the other one only female offspring." and he omits the sentence which follows, *viz.*, "Ovulation occurs in each ovary in alternating order." The whole reference is made in relation to observations in regard to ovulation when both ovaries are present. If the results following the removal of one ovary had been conclusive in regard to determination of sex, the whole question would have been settled years ago, but the only way of determining whether either ovary influences the sex of the offspring is to make observations in regard to the location of the *corpus luteum* in any case of abdominal operation during pregnancy.

If ovulation and menstruation were controlled by each ovary alternately, then it might be thought that the removal of an ovary would convert a twenty-eight day type of menstrual period into a fifty-six day type, but apparantly the nervous mechanism controlling menstruation and ovulation is capable, where one ovary has been removed, of producing offspring of either sex.

Alternate action of the ovaries, if each is capable of producing a different sex, would help to keep the birth-rate of males and females on a somewhat similar level, and the somewhat higher birth-rate of males would be accounted for by male offspring resulting after the first time of menstruation following parturition.

According to the findings of Dr. Siegel (*B.M.J.* of September 21, 1918, page 326) the large majority of the population would be male, as he found that male offspring generally resulted at the time of the month when conception was most prone to occur.

The object of my letter was merely to draw attention to the determination of sex in cattle, in the hope that someone with better opportunities than myself might be able to test the theory in regard to the determination of sex in mankind, and I must apologize for entering into a rather long discussion on a subject which is far from settled, but one on which general practitioners are sometimes consulted. I am satisfied that my observations in regard to cattle are correct.

Yours truly,

R. A. PARKER.

"Cottesbroke," Healesville, Victoria,
January 27, 1919.

[1] Dr. Parker refers to a sentence in his own letter published in *The Medical Journal of Australia* of January 18, 1919, page 62.

MASKS AS PREVENTIVE MEASURES AGAINST INFECTION.

Sir,—Now that the influenza epidemic is definitely here I would like to draw the attention of medical practitioners to the patterns of masks employed. In my opinion the ordinary nose and mouth mask is insufficient protection. An example: For the last two months I have found it necessary in the morning to place a few drops of argyrol (25%) in each eye. In less than a few minutes this has found its way through the tear ducts and sacs into my nose and naso-pharynx, and for several minutes afterwards I have been compelled to spit it out. I would suggest a mask after the military pattern, which covers the whole head and tied around the neck, with a mica piece let in to see through. This will prevent the germs from a patient reaching the conjunctivæ and so the nose and pharynx. It is more convenient to wear, and should afford adequate protection. The other masks are liable to slip without the person's knowledge.

Yours etc.,

JAS. J. WOODBURN.
Rhinologist, St. Vincent's Hospital, Sydney.

Beanbah, 235 Macquarie Street, Sydney.
January 27, 1919.

Books Received.

PHYSICAL AND OCCUPATIONAL RE-EDUCATION OF THE MAIMED, by Jean Camus, with the collaboration of A. Nyns, Bourrillon, F. Terrien, E. Fontane, Nové-Josserand, Bourget, Boureau, P. Larue, A. De Mazières, E. Leroux, P. De Cabaussel, E. Voron, J. Nanot, P. Lindemans, Belot, Privat, H. Nepper, and C. Vallée; Authorized Translation by W. F. Castle, with articles on British institutions by Sir Arthur Pearson, Margaret Sale and Dudley B. Myers; 1918. London: Baillière, Price, 5s.

UNITED STATES ARMY X-RAY MANUAL, Authorized by the Surgeon-General of the Army, prepared under the direction of the Division of Röntgenology, 1918. New York: Paul B. Hoeber; Crown 8vo., pp. Tindall & Cox; Crown 8vo., pp. 195, with 64 figures in the text. 506, 219 illustrations. Price, $4.

Medical Appointments.

Dr. J. Marshall (B.M.A.) has been appointed Government Medical Officer at Bega, New South Wales.

The following have been re-appointed members of the Advisory Committee under the provisions of Section 6 (2) of the *Pure Foods Act, 1908*, of New South Wales:—

Dr. R. T. Paton (B.M.A.), President of the Board of Health (chairman); Professor C. E. Fawsitt, Dr. J. B. Cleland (B.M.A.), Dr. W. G. Armstrong (B.M.A.), Dr. J. S. Purdy (B.M.A.), Dr. Thomas Cooksey.

The appointment of the undermentioned medical practitioners as medical officers in charge of the Lock Hospitals at the Gaols set opposite their respective names, is announced in the *New South Wales Government Gazette* of January 31, 1919:—

Tamworth—Dr. Henry Lewis Harris (B.M.A.).
Armidale—Dr. Walter Eli Harris (B.M.A.).
Balranald—Dr. Arthur Augustus Crooks (B.M.A.).
Bega—Dr. Joseph Marshall (B.M.A.).
Bombala—Dr. Robert Eddie.
Cobar—Dr. Henry Willans Connolly (B.M.A.).
Cootamundra—Dr. Egbert Florance (B.M.A.).
Deniliquin—Dr. John Edward Francis Hosking (B.M.A.).
Dubbo—Dr. Edward Henry Burkitt (B.M.A.).
Kempsey, West—Dr. Llewellyn Bentley Lancaster (B.M.A.).
Narrabri—Dr. Charles Mezier de Lepervanche.
Newcastle—Dr. John Harris (B.M.A.).
Taree—Dr. Frank Oliver Stokes (B.M.A)
Wentworth—Dr. Arthur Chenery (B.M.A.).
Young—Dr. Norman Dowling.

Dr. A. M. Cudmore (B.M.A.) and Dr. H. S. Newland (B.M.A.) have been appointed members of the Dental Board of South Australia.

It is announced that Dr. C. L. Park (B.M.A.), of Melbourne, and Dr. F. S. Hone (B.M.A.), of Adelaide, have been appointed Medical Referees for the purposes of the *Seamen's Compensation Act, 1911.*

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

Royal Australian Naval Service: Ten Commissions as Surgeons.

Department of Public Health, Queensland: Senior Bacteriologist and Pathologist.

Camooweal Cottage Hospital, Queensland: Medical Officer and Dispenser.

Charters Towers Hospital, Queensland: Resident Medical Superintendent.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta, Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. New South Wales Ambulance and Transport Brigade. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Feb. 11.—N.S.W. Branch, B.M.A., Ethics Committee.
Feb. 13.—Vic. Branch, B.M.A., Council.
Feb. 14.—Queensland Branch, B.M.A., Council.
Feb. 14.—S.A. Branch, B.M.A., Council.
Feb. 18.—Tas. Branch, B.M.A., Council.
Feb. 18.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Feb. 25.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Feb. 26.—Vic. Branch, B.M.A., Council.
Feb. 27.—S.A. Branch, B.M.A.
Feb. 28.—Queensland Branch, B.M.A., Council.
Mar. 4.—Tas. Branch, B.M.A., Council.
Mar. 5.—Vic Branch, B.M.A.
Mar. 7.—Q. Branch, B.M.A.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.

The Honorary Librarian of the New South Wales Branch of the British Medical Association notes that the following numbers of *Surgery, Gynecology and Obstetrics* are missing from the library files:—

1915: August, October and December.
1916: February, April and November.
1917: March.

Members who have borrowed these journals, are requested to return them as soon as possible, to enable the completed volumes to be bound.